If any business needs a dose of creativity, it's health care. A systematic assessment of the industry's innovation ills suggests some remedies and offers a framework for thinking about the obstacles to new ventures in any business.

Why Innovation in Health Care Is So Hard

by Regina E. Herzlinger

HEALTH CARE – in the United States, certainly, but also in most other developed countries – is ailing and in need of help. Yes, medical treatment has made astonishing advances over the years. But the packaging and delivery of that treatment are often inefficient, ineffective, and consumer unfriendly.

The well-known problems range from medical errors, which by some accounts are the eighth leading cause of death in the United States, to the soaring cost of health care. The amount spent now represents about one-sixth of the U.S. gross domestic product; it continues to grow much faster than the economy; and it threatens the economic future of the governments, businesses, and individuals called upon to foot the bill. Despite the outlay, more than 40 million people have no health insurance.

Such problems beg for innovative solutions involving every aspect of health care – its delivery to consumers, its technology, and its business models. Indeed, a great deal of money has been spent on the search for solutions. U.S. government spending on health care R&D, which came to $26 billion in 2003, is topped only by the government's spending on defense R&D. Private-sector spending on health care R&D – in pharmaceuticals, biotechnology, medical devices, and health services – also runs into the tens of billions of dollars. According to one study of U.S. companies, only software spawns more new ventures receiving early-stage angel funding than the health field.

Despite this enormous investment in innovation and the magnitude of the opportunity for innovators to both do good and do well, all too many efforts fail, losing billions of investor dollars along the way. Some of the more conspicuous examples: the disastrous outcome of the managed care revolution, the $40 billion lost by investors to biotech ventures, and the collapse of numerous businesses aimed at bringing economies of scale to fragmented physician practices.

So why is innovation so unsuccessful in health care? To answer, we must break down the problem, looking at the different types of innovation and the forces that affect them, for good or ill. (See the sidebar "Six Forces That Can Drive Innovation – Or Kill It.") This

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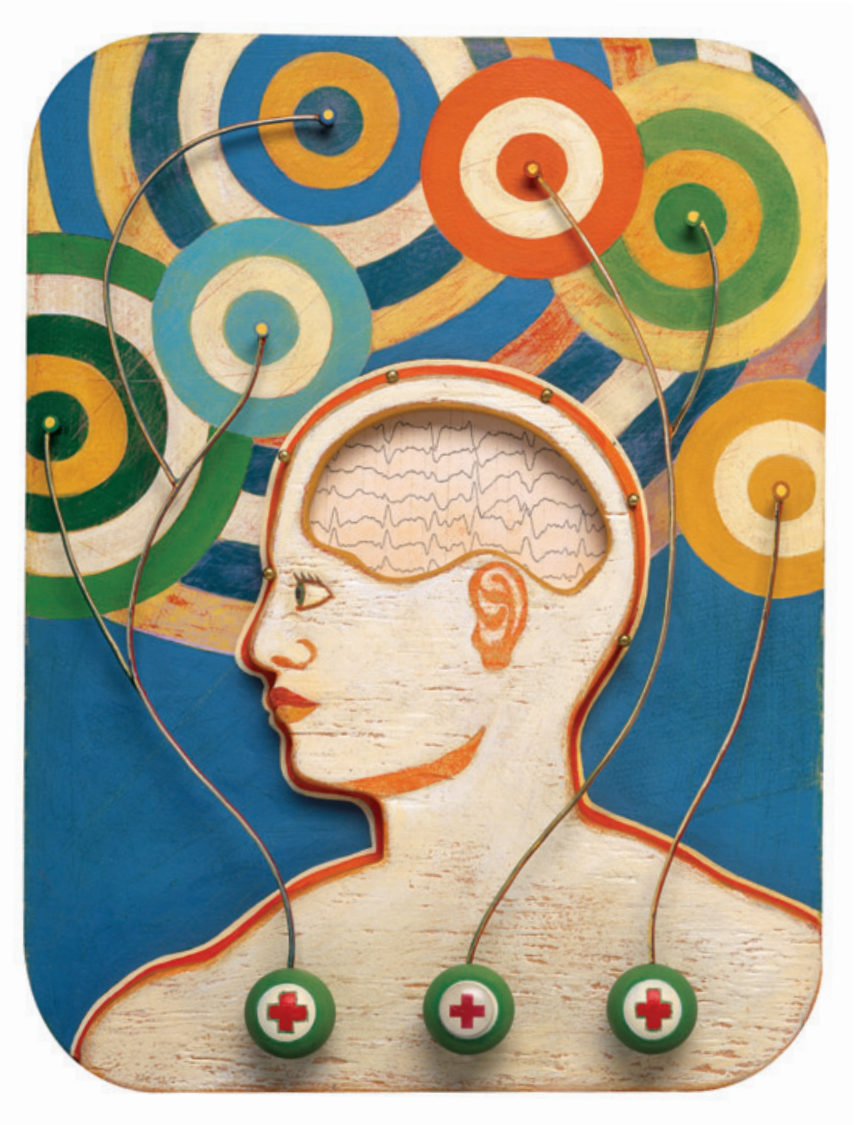

method of analysis, while applied here mainly to health care in the U.S., also offers a framework for understanding the health care problems of other developed economies – and for helping managers understand innovation challenges in any industry.

A Health Care Innovation Catalog

Three kinds of innovation can make health care better and cheaper. One changes the ways *consumers* buy and use health care. Another uses *technology* to develop new products and treatments or otherwise improve care. The third generates new *business models,* particularly those that involve the horizontal or vertical integration of separate health care organizations or activities.

Consumer focused. Innovations in the delivery of health care can result in more-convenient, more-effective, and less-expensive treatments for today's time-stressed and increasingly empowered health care consumers. For example, a health plan can involve consumers in the service delivery process by offering low-cost, high-deductible insurance, which can give members greater control over their personal health care spending. Or a health plan (or service provider) can focus on becoming more user-friendly. Patients, after all, are like other consumers: They want not only a good product – quality care at a good price – but also ease of use. People in the United States have to wait an average of three weeks for an appointment and, when they show up, 30 minutes to see a doctor, according to a 2003 study by the American Medical Association. More seriously, they often must travel from one facility to another for treatment, especially in the case of chronic diseases that involve several medical disciplines.

Technology. New drugs, diagnostic methods, drug delivery systems, and medical devices offer the hope of better treatment and of care that is less costly, disruptive, and painful. For example, implanted sensors can help patients monitor their diseases more effectively. And IT innovations that connect the many islands of information in the health care system can both vastly improve quality and lower costs by, for example, keeping a patient's various providers informed and thereby reducing errors of omission or commission.

Business model. Health care is still an astonishingly fragmented industry. More than half of U.S. physicians work in practices of three or fewer doctors; a quarter of the nation's 5,000 community hospitals and nearly half of its 17,000 nursing homes are independent; and the medical device and biotechnology sectors are made up of thousands of small firms. Innovative business models, particularly those that integrate health care activities, can increase efficiency, improve care, and save consumers time. You can roll a number of independent players up into a single organization – horizontal integration – to generate economies of scale. Or you can bring the treatment of a chronic disease under one roof – vertical integration – and make the treatment more effective and convenient. In the latter case, patients get one-stop shopping and are freed from the burden of coordinating their care with myriad providers (for example, the ophthalmologists, podiatrists, cardiologists, neurologists, and nephrologists who care for diabetics). Such "focused factories," to adopt C. Wickham Skinner's term, cut costs by improving patients' health. Furthermore, they reduce the likelihood that an individual's care will fall between the cracks of different medical disciplines.

The health care system erects an array of barriers to each of these valuable types of innovation. More often than not, though, the obstacles can be overcome by managing the six forces that have an impact on health care innovation.

The Forces Affecting Innovation

The six forces – industry players, funding, public policy, technology, customers, and accountability – can help or hinder efforts at innovation. Individually or in combination, the forces will affect the three types of innovation in different ways.

Players. The health care sector has many stakeholders, each with an agenda. Often, these players have substantial resources and the power to influence public policy and opinion by attacking or helping the innovator. For example, hospitals and doctors sometimes blame technology-driven product innovators for the health care system's high costs. Medical specialists wage turf warfare for control of patient services, and insurers battle medical service and technology providers over which treatments and payments are acceptable. Inpatient hospitals and outpatient care providers vie for patients, while chains and independent organizations spar over market influence. Nonprofit, for-profit, and publicly funded institutions quarrel over their respective roles and rights. Patient advocates seek influence with policy makers and politicians, who may have a different agenda altogether – namely, seeking fame and public adulation through their decisions or votes.

The competing interests of the different groups aren't always clear or permanent. The AMA and the tort lawyers, bitter foes on the subject of physician malpractice, have lobbied together for legislation to enable people who are wrongly denied medical care to sue managed-care insurance plans. Unless innovators recognize and try to work with the complex interests of the different players, they will see their efforts stymied.

Funding. Innovation in health care presents two kinds of financial challenges: funding the innovation's development and figuring out who will pay how much for the product or service it yields. One problem is the long investment time needed for new drugs or therapies that require FDA approval. While venture capitalists backing an IT start-up may be able to get their money out in two to three years, investors in a biotech firm have to wait ten years even to find out whether a product will be approved for use. Another problem is that many traditional sources of capital aren't familiar with the health care industry, so it's difficult to find investors, let alone investors who can provide helpful guidance to the innovator.

A frequent source of investor confusion is the health care sector's complex system of payments, or reimbursements, which typically come not from the ultimate consumer but from a third party – the government or a private insurer. This arrangement raises an array of issues. Most obviously, insurers must approve a new product or service, and its pricing, before they will pay. And their perception of a product's value, which determines the level of reimbursement, may differ from patients'. Furthermore, insurers may disagree. Medicare, whose relationships with its enrollees sometimes last decades, may see far more value in an innovation with a long-term cost impact, such as an obesity reduction treatment or an expensive diagnostic test, than would a commercial insurer, which typically sees an annual 20% turnover. An additional complication: Innovations need to appeal to doctors, who are in a position to recommend new products to patients, and doctors' opinions differ. From a financial perspective, a physician who is paid a flat salary by a health maintenance organization may be less interested in, say, performing a procedure to implant a monitoring device than would a doctor who is paid a fee for such services.

Policy. Government regulation of health care can sometimes aid innovation ("orphan drug" laws provide incentives to companies that develop treatments for rare diseases) and sometimes hinder it (recent legislation in the United States placed a moratorium on the opening of new specialty hospitals that focus on certain surgical procedures). Thus, it is important for innovators to understand the extensive network of regulations that may affect a particular innovation and how and by whom those rules are enacted, modified, and applied. For instance, officials know they will be punished by the public and politicians more for underregulating – approving a harmful drug, say – than for tightening the approval process, even if doing so delays a useful innovation.

The competing interests of different players aren't always permanent. The AMA and the tort lawyers, bitter foes on malpractice, have lobbied together to allow patients to sue managed care plans.

A company with a new health care idea should also be aware that regulators, to demonstrate their value to the public, may ripple their muscles occasionally by tightly interpreting ambiguous rules or punishing a hapless innovator.

Technology. As medical technology evolves, understanding how and when

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to adopt or invest in it is critically important. Move too early, and the infrastructure needed to support the innovation may not yet be in place; wait too long, and the time to gain competitive advantage may have passed.

Keep in mind that competition exists not only within each technology–among drugs aimed at a disease category, for example–but also across different technologies. The polio vaccine eventually eliminated the need for drugs, devices, and services that had been used to treat the disease, just as kidney transplants have reduced the need for dialysis. Conversely, the discovery of an effective molecular diagnostic method for a disease such as Alzheimer's would greatly enhance the demand for therapeutic drugs and devices.

Customers. The empowered and engaged consumers of health care – the passive "patient" increasingly seems an anachronistic term – are a force to be reckoned with in all three types of health care innovation. Sick people and their families join disease associations such as the American Cancer Society that lobby for research funds. Interest groups, such as the elderly, advocate increased funding for their health care needs through powerful organizations such as AARP. Those who suffer from various ailments pressure health care providers for access to drugs, diagnostics, services, and devices they consider effective.

What's more, consumers spend tremendous sums out of their own pockets on health care services–for example, an estimated $40 billion on complementary medicine such as acupuncture and meditation–that many traditional medical providers believe to be of dubious value. Armed with information gleaned from the Internet, such consumers disregard medical advice they don't agree with, choosing, for example, to shun certain drugs doctors have prescribed. A company that recognizes and leverages consumers' growing sense of empowerment, and actual power, can greatly enhance the adoption of an innovation.

Accountability. Increasingly, empowered consumers and cost-pressured payers are demanding accountability from health care innovators. For instance, they require that technology innovators show cost-effectiveness and long-term safety, in addition to fulfilling the shorter-term efficacy and safety requirements of regulatory agencies. In the United States, the numerous industry organizations that have been created to meet these demands haven't fully succeeded in doing so. For example, a study found that the accreditation of hospitals by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), an industry-dominated group, had scant correlation with mortality rates.

One reason for the limited success of these agencies is that they typically focus on process rather than on output, looking, say, not at improvements in patient health but at whether a provider has followed a treatment process. However well intentioned, these bodies usually aren't neutral auditors focused on the consumer but rather are extensions of the industries they regulate. For instance, JCAHO and the National Committee for Quality Assurance, the agencies primarily responsible for monitoring compliance with standards in the hospital and insurance sectors, are overseen mainly by the firms in those industries.

But whether the agents of accountability are effective or not, health care innovators must do everything possible to try to address their often opaque demands. Otherwise, innovating companies face the prospect of a forceful backlash from industry monitors or the public.

Six Forces That Can Drive Innovation – Or Kill It

Players
The friends and foes lurking in the health care system that can destroy or bolster an innovation's chance of success.

Funding
The processes for generating revenue and acquiring capital, both of which differ from those in most other industries.

Policy
The regulations that pervade the industry, because incompetent or fraudulent suppliers can do irreversible human damage.

Technology
The foundation for advances in treatment and for innovations that can make health care delivery more efficient and convenient.

Customers
The increasingly engaged consumers of health care, for whom the passive term "patient" seems outdated.

Accountability
The demand from vigilant consumers and cost-pressured payers that innovative health care products be not only safe and effective but also cost-effective relative to competing products.

The Barriers to Innovation

Unless the six forces are acknowledged and managed intelligently, any of them can create obstacles to innovation in each of the three areas.

In consumer-focused innovation. The existence of hostile industry *players* or the absence of helpful ones can hinder consumer-focused innovation. Status

quo organizations tend to view such innovation as a direct threat to their power. For example, many physicians resent direct-to-consumer pharmaceutical advertising or for-profit attempts to provide health care in convenient locations, such as shopping malls, and use their influence to resist such moves. Conversely, companies' attempts to reach consumers with new products or services are often thwarted by a lack of developed consumer marketing and distribution channels in the health care sector as well as a lack of intermediaries, such as distributors, who would make the channels work. Opponents of consumer-focused innovation may try to influence public *policy,* often by playing on the general bias against for-profit ventures in health care or by arguing that a new type of service, such as a facility specializing in one disease, will cherry-pick the most profitable customers and leave the rest to nonprofit hospitals. Innovators must therefore be prepared to respond to those seeking *accountability* for a new product's or new service's cost-effectiveness, efficacy, and safety.

It also can be difficult for innovators to get *funding* for consumer-focused ventures because few traditional health care investors have significant expertise in products and services marketed to and purchased by the consumer. This hints at another financial challenge: Consumers generally aren't used to paying for conventional health care. While they may not blink at the purchase of a $35,000 SUV – or even a medical service not traditionally covered by insurance, such as cosmetic surgery or vitamin supplements – many will hesitate to fork over $1,000 for a medical image. Insurers and other third-party payers also may resist footing the bill for some consumer-focused services – for example, increased diagnostic testing – fearing a further increase in their costs.

These barriers impeded – and ultimately helped kill or drive into the arms of a competitor – two companies that offered innovative health care services directly to consumers. Health Stop was a venture capital–financed chain of conveniently located, no-appointment-needed health care centers in the eastern and midwestern U.S. for patients who were seeking fast medical treatment and did not require hospitalization. Although designed to serve people who had no primary care doctor or who needed treatment on nights and weekends, Health Stop unwittingly found itself competing with local community doctors and nonprofit hospital emergency rooms for business.

Guess who won? The community doctors bad-mouthed Health Stop's quality of care and its faceless corporate ownership, while the hospitals argued in the media that their emergency rooms could not survive without revenue from the relatively healthy patients whom Health Stop targeted. The criticism tarnished the chain in the eyes of some patients. Because Health Stop hadn't fully anticipated this opposition, it hadn't worked in advance with the local physicians and hospitals to resolve problems and to sufficiently document to the medical community the quality of its care. The company's failure to foresee these setbacks was compounded by the lack of health services expertise of its major investor, a venture capital firm that typically bankrolled high-tech startups. Although the chain had more than 100 clinics and generated annual sales of more than $50 million during its heyday, it was never profitable. The business was dissolved after a decade.

HealthAllies, founded as a health care "buying club" in 1999, met a similar fate. By aggregating purchases of medical services not typically covered by insurance – such as orthodontia, in vitro fertilization, and plastic surgery – it hoped to negotiate discounted rates with providers, thereby giving individual customers, who paid a small referral fee, the collective clout of an insurance company. It was a classic do-good, do-well venture, but it failed to flourish.

The main obstacle was the health care industry's absence of marketing and distribution channels for individual consumers. Potential intermediaries weren't sufficiently interested. For many employers, adding this service to the subsidized insurance they already offered employees would have meant new administrative hassles with little benefit. Insurance brokers found the commissions for selling the service – a small percentage of a small referral fee – unattractive, especially as customers were purchasing the right to participate for a one-time medical need rather than renewable policies. Without marketing channels, the company found that its customer acquisition costs were too high. HealthAllies was bought for a modest amount in 2003. UnitedHealth Group, the giant insurance company that took it over, has found ready buyers for the company's service among the many employers it already sells insurance to.

Because insurers tend to analyze their costs in silos, they may resist approving, say, an expensive new heart drug even if it will decrease the company's payments for cardiac-related hospital admissions.

In technology-based innovation. The obstacles to technological innovations are numerous. On the *accountability* front, an innovator faces the complex task of complying with a welter of often murky governmental regulations, which increasingly require companies to show that new products not only do what's claimed, safely, but also are cost-effective relative to competing products.

As for *funding,* the innovator must work with insurers in advance of a launch to see to it that the product will be eligible for reimbursement (usually easier if it's used in treatment than if it's for diagnostic purposes). In seeking this approval, the innovator will typically look for support from industry *players* – physicians, hospitals, and an array

of powerful intermediaries, including group purchasing organizations, or GPOs, which consolidate the purchasing power of thousands of hospitals. GPOs typically favor suppliers with broad product lines rather than a single innovative product. The intermediaries also include pharmaceutical benefit managers, or PBMs, which create "formularies" for health insurers – that is, the menu of drugs that will be made available at relatively low prices to enrollees.

Innovators must also take into account the economics of insurers and health care providers and the relationships among them. For instance, insurers do not typically pay separately for capital equipment; payments for procedures that use new equipment must cover the capital costs in addition to the hospital's other expenses. So a vendor of a new anesthesia technology must be ready to help its hospital customers obtain additional reimbursement from insurers for the higher costs of the new devices.

Even technologies that unambiguously reduce costs – by substituting capital for labor, say, or shortening the length of a hospital stay – face challenges. Because insurers tend to analyze their costs in silos, they often don't see the link between a reduction in hospital labor costs and the new technology responsible for it; they see only the new costs associated with the technology. For example, insurers may resist approving an expensive new heart drug even if, over the long term, it will decrease their payments for cardiac-related hospital admissions.

Innovators must also take pains to identify the best parties to target for adoption of a new technology and then provide them with complete medical and financial information. Traditionally trained surgeons, for instance, may take a dim view of what are known as minimally invasive surgery, or MIS, techniques, which enable radiologists and other nonsurgeons to perform operations. In the early days of MIS, a spate of articles that could be interpreted as an attempt by surgeons to protect their turf appeared in the *New England Journal of Medicine* claiming the techniques would cause an explosion of unneeded surgeries.

A little-appreciated barrier to technology innovation involves *technology* itself – or, rather, innovators' tendency to be infatuated with their own gadgets and blind to competing ideas. While an innovative product may indeed offer an effective treatment that would save money, particular providers and insurers might, for a variety of reasons, prefer a completely different technology.

One technology-driven medical device firm saw a major product innovation foiled by several such obstacles. The company's product, an instrument for performing noninvasive surgery to correct acid reflux disease, simplified an expensive and complicated operation, enabling gastroenterologists to perform a procedure usually reserved for surgeons. The device would have allowed surgeons to increase the number of acid reflux procedures they performed. But instead of going to the surgeons to get their buy-in, the company targeted only gastroenterologists for training, setting off a turf war. The firm also failed to work out with insurers a means to obtain coverage and payment – it didn't even obtain a new billing code for the device – before marketing the product. Without these reimbursement protocols in place, physicians and hospitals were reluctant to quickly adopt the new procedure.

Perhaps the biggest barrier was the company's failure to consider a formidable but less-than-obvious competing technology, one that involved no surgery at all. It was an approach that might be called the "Tums solution." Antacids like Tums – and, even more effectively, drugs like Pepcid and Zantac, which had recently come off patent – provided some relief and were deemed good enough by many consumers. As a result, the technologically innovative device for noninvasive surgery was adopted very slowly, permitting rival firms to enter the field.

Similarly, a company that developed a cochlear implant for the profoundly deaf was so infatuated with the technology that it didn't foresee opposition from militant segments of the hearing-impaired community that objected to the concept of a technological "fix" for deafness.

In business model innovation. The integration of health care activities – consolidating the practices of indepen-

dent physicians, say, or integrating the disparate treatments of a particular disease–can lower costs and improve care. But doing this isn't easy. Many management firms that sought to horizontally integrate physician practices are now bankrupt. And specialty facilities designed to vertically integrate the treatment of a particular disease, from prevention to cure, have generally lost money.

As with consumer-focused innovations, ventures that experiment with new business models often face opposition from local hospitals, physicians, and other industry *players* for whom such innovation poses a competitive threat. Powerful community-based providers that might be harmed by a larger or more efficient rival work to undermine the venture, often playing the public *policy* card by raising antitrust concerns or making the most of prejudices or laws against physician-owned businesses.

Nonprofit health services providers cannot easily merge, because they tend to lack the capital to buy one another. While capital is usually available for *funding* for-profit ventures that are based on horizontal consolidation, vertically integrated organizations may encounter greater difficulties in securing investment, because there typically isn't reimbursement for integrated treatment of a disease (think of breast cancer). Instead, payment is piecemeal. Although Duke University Medical Center's specialized congestive heart failure program reduced the average cost of treating patients by $8,600, or about 40%, by improving their outcomes and therefore their hospital admission rates, the facility was penalized by insurers, which pay for care of the sick and not for improving people's health status. The healthier its patients were, the more money Duke lost.

Technology also plays a part in the success or failure of such operations. Without a robust IT infrastructure, an organization won't be able to deliver the promised benefits of integration. This may not be immediately obvious to people in the health care industry, which is near the bottom of the ladder in terms of IT spending and uniform data standards.

Such obstacles contributed to the problems of MedCath, a North Carolina–based for-profit chain of hospitals specializing in cardiac surgical procedures. In each of the 12 markets where it opened in the late 1990s and early 2000s, the company faced resistance from general-purpose hospitals. They argued that instead of offering cheaper care and better outcomes because of its specialized focus (as the company claimed), MedCath was simply skimming the profitable patients. In some cases, local hospitals strong-armed commercial insurers into excluding MedCath from their lists of approved providers, threatening to cut their own ties with the insurers if they failed to blackball MedCath.

The resistance was further fueled by resentment among local doctors toward

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MedCath physicians, all of whom were part owners of the chain. The ownership issue also raised problems on another front. Spurred by arguments that conflicts of interest were unavoidable at MedCath and other physician-owned hospitals, Congress in 2003 placed a moratorium on the future growth of such facilities.

Avoiding the Obstacles

Only legislators can remove the barriers to health care innovation that are the result of current laws and regulations (see the sidebar "Prescriptions for Public Policy"). But companies are far from helpless. A few simple steps can position your business to thrive, despite the obstacles. First, recognize the six forces. Next, turn them to your advantage, if possible. If not, work around them, or, if necessary, concede that a particular innovative venture may not be worth pursuing, at least for now.

Companies are far from helpless in the face of obstacles to health care innovation. A few simple steps can position your business to thrive.

MinuteClinic, a Minneapolis-based chain of walk-in clinics located in retail settings such as Target stores, avoided some of the obstacles that hobbled Health Stop in its effort at *consumer-focused innovation.* Like Health Stop, MinuteClinic offers basic health care designed with the needs of cost-conscious and time-pressed consumers in mind. It features short waits and low prices – even lower than Health Stop's, because MinuteClinic treats only a limited set of common ailments (such as strep throat and bladder infections) that don't require expensive equipment. But the big difference is that MinuteClinic hasn't antagonized local physicians. Because care is provided by nurse practitioners, the company doesn't represent a direct competitive threat. Although some doctors have grumbled that nurse practitioners might fail to spot more serious problems, especially in infants, there has been no widespread outcry against MinuteClinic, making the establishment of in-network relationships with major health plans relatively easy.

Medtronic was one of the first makers of implantable heart pacemakers, but over the years, the Minneapolis-based company branched into other medical and surgical devices. The company's success is partly based on its ability to avoid some of the barriers to *technology innovation* that beset the previously mentioned developer of an acid-reflux device. For example, when Medtronic expanded into implantable heart defibrillators, it worked directly with the surgeons who would be implanting them so that the company could identify problems and set procedures. It confirmed the devices' safety and efficacy in clinical trials, which greatly simplified reimbursement approval from insurers. And, of course, there was no effective Tums equivalent as an alternative.

HCA (originally known as Hospital Corporation of America) successfully pioneered a *business model innovation* that allowed it to consolidate the management of dozens of facilities and thereby realize economies of scale unknown in the fragmented health care industry. The national chain – currently 190 hospitals and 200 outpatient centers – succeeded in part because it didn't try to compete head-to-head with politically powerful academic medical centers. Instead, it grew mostly through expansion into underserved communities, where customers were grateful for a local hospital and where doctors welcomed the chance to work in modern facilities. The certainty of reimbursement from insurers and Medicare enabled HCA to borrow heavily for construction, and its access to the equity markets as a public company offered funding that was unavailable to nonprofit hospitals. In the late 1990s, HCA was investigated for Medicare and Medicaid fraud and paid

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Prescriptions for Public Policy

In the United States, a few policy changes would jump-start the health care industry's ability to innovate.

Universal coverage. Ensuring that the 46 million or so uninsured people in the U.S. have health insurance would spur innovation by dramatically increasing the size of the market. But is it achievable? Universal coverage is, after all, one of the most contentious political issues of our time. Switzerland offers some possible answers. The country requires people to buy health insurance, subsidizing the sick and those who can't afford coverage. Although the Swiss government constrains the design of benefits, Swiss insurers have greater incentives to respond to consumer needs than do U.S. insurers, which sell primarily to employers or to government-based organizations. Switzerland's excellent health care system costs only 11% of GDP, versus 16% for the United States. More detail on the Swiss experience can be found in an article I coauthored, "Consumer-Driven Health Care: Lessons from Switzerland" (*Journal of the American Medical Association,* September 8, 2004).

A consumer-driven system. Giving U.S. consumers control over their health insurance spending would transform the health insurance market, better aligning consumers' and innovators' interests. We are already seeing this in the case of the increasingly popular low-cost, high-deductible health insurance policies offered by many employers. To create a completely consumer-driven system, we'd need to replace tax laws favoring employer-based insurance with individual tax credits for health insurance spending, thereby prompting the transfer of funds that employers currently spend on employee health insurance to the employees themselves.

Market-based pricing. A system in which insurers set the prices that providers charge consumers is inefficient and a barrier to innovative attempts to integrate health care activities. Think of Duke University Medical Center's innovative congestive heart failure program: The problem has been that the more patients it could successfully treat without lengthy and expensive hospital admissions, the less money it would make in insurance reimbursement. Disincentives to provide lower-cost care are common; making patients healthy usually doesn't pay. And integrating care – offering the medical equivalent of an automobile, rather than a wheel, an engine, and a chassis – typically doesn't have a reimbursement code.

An SEC for health care. In a consumer-driven health care market, how can you shop if you don't know the prices or, more important, the quality of what you're buying? The best mechanism for transparency exists in the financial markets in the form of the U.S. Securities and Exchange Commission. While it has its flaws, the SEC generally ensures that consumers have adequate information by requiring companies to publish financial results that are verified by an independent auditor. In health care, the outcome data of individual providers of care are rarely available, and, when they are, they may be of dubious integrity because they aren't audited by certified, independent professionals.

a settlement of $1.7 billion, the largest fraud settlement in U.S. history. No criminal charges were brought against the company, and some people wondered whether a nonprofit institution would have paid so dearly for its alleged misdeeds. But the publicly traded company weathered the crisis and, with a new management team in place, has continued to perform well.

An All-Purpose Treatment

The framework described in this article – the three types of health care innovation and the six forces that affect them – offers a useful way to examine the barriers to innovation in health care systems outside the United States, too. For example, in certain European countries, the government's role as the primary payer for health care has created a different interplay among the six forces.

For obvious reasons, the single-payer system hinders customer-focused innovation. But it also seriously constrains technology-based innovation. The government's need to strictly control costs translates into less money to spend on care of the truly sick, who are the target of most technology-based innovation. Consequently, a large venture-capital community hasn't grown up in Europe to fund new health technology ventures. Centralized health care systems, with their buying clout, also keep drug and medical device prices low – delighting consumers but squeezing margins for innovators. The centralized nature of the systems would seem to offer the potential for innovation in the treatment of diseases where a lot of integration is needed, but the record is mixed.

Modified to fit the situation, this framework can also be used to analyze the barriers to innovation in a variety of industries. Cataloging the types of innovation that can add value in particular fields and identifying the forces that aid and undermine those advances can uncover insights on how to treat chronic innovation ills – prescriptions that will make any industry healthier.

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