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Radical innovation and disruptive technologies are frequently heralded as a solution to delivering higher quality, lower cost health care. According to the literature on disruption, local hospitals and physicians (incumbent providers) may be unable to competitively respond to such "creative destruction" and alter their business models for a host of reasons, thus threatening their future survival. However, strategic management theory and research suggest that, under certain conditions, incumbent providers may be able to weather the discontinuities posed by the disrupters. This article analyzes 3 disruptive innovations in service delivery: single-specialty hospitals, ambulatory surgical centers, and retail clinics. We first discuss the features of these innovations to assess how disruptive they are. We then draw on the literature on strategic adaptation to suggest how incumbents develop competitive responses to these disruptive innovations that assure their continued survival. These arguments are then evaluated in a field study of several urban markets based on interviews with both incumbents and entrants. The interviews indicate that entrants have failed to disrupt incumbent providers primarily as a result of strategies pursued by the incumbents. The findings cast doubt on the prospects for these disruptive innovations to transform health care.

Keywords

Ambulatory Care Facilities, Diffusion of Innovation, Economic Competition, Health Personnel, Health Services Accessibility, Hospitals, Special, Humans, Interviews as Topic, Models, Theoretical, Surgicenters, United States

Disciplines

Health and Medical Administration | Health Services Administration | Medical Education | Other Public Health | Surgery

Strategic Response by Providers to Specialty Hospitals, Ambulatory Surgery Centers, and Retail Clinics

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Abstract

Radical innovation and disruptive technologies are frequently heralded as a solution to delivering higher quality, lower cost health care. According to the literature on disruption, local hospitals and physicians (incumbent providers) may be unable to competitively respond to such “creative destruction” and alter their business models for a host of reasons, thus threatening their future survival. However, strategic management theory and research suggest that, under certain conditions, incumbent providers may be able to weather the discontinuities posed by the disrupters. This article analyzes 3 disruptive innovations in service delivery: single-specialty hospitals, ambulatory surgical centers, and retail clinics. We first discuss the features of these innovations to assess how disruptive they are. We then draw on the literature on strategic adaptation to suggest how incumbents develop competitive responses to these disruptive innovations that assure their continued survival. These arguments are then evaluated in a field study of several urban markets based on interviews with both incumbents and entrants. The interviews indicate that entrants have failed to disrupt incumbent providers primarily as a result of strategies pursued by the incumbents. The findings cast doubt on the prospects for these disruptive innovations to transform health care. (*Population Health Management* 2011;14:69–77)

Introduction

Creative destruction, radical innovation, and disruptive technology

JOSEPH SCHUMPETER LONG AGO DESCRIBED THE PROCESS of “creative destruction” whereby entrepreneurial entrants to an industry take advantage of opportunities afforded by new technologies, organization models, and products that incumbents cannot.¹ These innovations are labeled “radical innovations” because they challenge the status quo, constitute new and risky ways of doing business, and typically emerge at the periphery of the market or industry. As a result, the new entrants develop a competitive advantage over the incumbents and earn higher profits based on lower production costs or the customer’s willingness to pay a higher price.

More recently, Clay Christensen identified a subset of innovations that creatively destroy established markets: *disruptive technologies*. Several examples of disruptive innovation developed in health care delivery during the late 20th century. Balloon angioplasty, performed by interventional cardiologists, developed in the 1970s but took nearly 2

decades to become commonplace because of perceptions of lower effectiveness. The procedure (involving a coronary stent) was initially limited to less complex cases, but since has partially replaced invasive heart bypass surgery performed by cardiothoracic surgeons. LASIK eye surgery was invented during the 1960s but took nearly 3 decades to overcome professional skepticism, receive Food and Drug Administration approval, and become commonplace. LASIK has rendered obsolete the products and services provided by lens manufacturers and opticians and, in some states, is now being performed by optometrists instead of ophthalmic surgeons. In both cases, practitioners needed to negotiate a steep learning curve to achieve higher quality results.

For such products, profit is based not so much on the consumer’s greater willingness to pay but on substantially lower production costs and the increased convenience to the customer. Over the past 10 years, Christensen and colleagues have argued that disruptive organizational models of delivery are needed to improve the affordability and convenience of health care.^{2,3,4,5,6,7,8,9} They cite single-specialty hospitals (SSHs), ambulatory surgery centers (ASCs), and retail clinics (RCs) as illustrations of disruption.^{8,10}

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SSHs provide largely identical services to inpatient departments in general community hospitals, just as ASCs do in lieu of hospital outpatient surgery departments. Both tend to treat less complex patients, provide narrower services, and enjoy less backup capability. RCs, which serve as an alternative to primary care physicians' offices, deliver a narrower set of services that are provided by nurse practitioners to patients with and without health insurance.

Radical and disruptive elements that challenge incumbents

What makes these models disruptive compared to status quo models of delivery? SSHs, ASCs, and RCs offer existing services and products at lower intensity and lower/comparable quality than their rivals but more than compensate by sharply reducing price.^{11,12} They also share the following disruptive characteristics: simplicity, customer convenience,² substitution of lower cost manpower (nurse practitioners over physicians, primary care physicians over specialists), substitution of lower cost sites of care (outpatient centers over hospitals, home care over office-based care), appeal to new or the lower end of market customers, creation of new markets and/or business models, and lower initial performance but ultimately quality enhancement.

These innovations threaten the business models of incumbent providers, who may find it difficult to respond for several reasons. First, they may suffer cognitive barriers and fail to recognize the implications of the radical innovation (eg, resulting from a lack of information or evidence base regarding the disruption). Second, they may recognize the implications but choose not to respond (eg, because of the challenge of cultural change, rigidity of their procedures and routines, and organizational inertia). Third, they may recognize the implications but be unable to match the competencies of the new entrants. This may arise from (a) their higher cost operations that cause them to incur losses in the new areas; (b) a near-exclusive focus on their current customers at the expense of seeking out newer ones with lower cost services; and (c) the fact that the disruptive innovation conflicts with their core strategy and thus inhibits investment in disruptive areas. Instead of competing with disruptive innovation, incumbents resist, oppose, or seek to discredit them.

How strong is the challenge posed by radical and disruptive elements?

Despite the characterization above, several considerations suggest that SSHs, ASCs, and RCs may not be that disruptive. First, contrary to the disruption thesis, there may be little substitution taking place, other than the site of care. The same practitioners tend to be involved regardless of where the care is performed. For example, the same orthopedic surgeons perform procedures in both ASCs and hospital outpatient surgical units, just as the same nurse practitioners may see patients in a RC, a primary care physician's office, or at the patient's residence. Moreover, both traditional and disruptive organizational sites (particularly SSHs and ASCs) utilize roughly the same techniques with small differences in the degree of standardization, automation, routinization, or commoditization taking place in the latter. Comparable results observed in one study of RCs may be due to that

study's focus on a site possessing an electronic medical record, uncommon in the offices of primary care physicians.¹⁴

There are potentially important differences nevertheless. While the same providers might see patients in both traditional and disruptive settings and treat them in similar ways, there are fewer consulting colleagues and less technical backup in the disruptive sites, which may limit the overall quality of care that can be provided. Counterbalancing any potential quality differences is the fact that patients seen in disruptive settings tend to be lower severity cases that typically require less backup.¹⁵

Second, there are few differences in the performance attributes targeted by disruptive organizational sites. ASCs and outpatient surgeries offer patients roughly the same set of valued benefits, just as RCs may offer similar levels of care in routine visits as do primary care physicians and pediatricians. However, ASCs and RCs potentially trade off greater patient convenience (eg, easier access, shorter waiting times) for less technical backup (eg, emergency services) and provider skill on-site (eg, potentially missed diagnoses). To manage the clinical risk effectively, ASCs and RCs may tend to treat less complex cases. Although patients with health insurance coverage tend to be price insensitive, they may trade off a small probability of inadequate care in the event of a complication for the certainty of greater convenience and lower price by seeking treatment in such settings.

Third, there is no evidence that traditional providers (whether hospitals or physicians) offer innovation that overshoots the needs of average customers, which creates a niche opportunity for disrupters. Instead, the disruptive sites often induce demand for their services and cherry-pick the healthier patients—for example, as physicians refer their surgical patients to sites in which they have a financial interest, or RC operators locate their sites in retail establishments frequented by active shoppers—leaving the traditional sites with higher severity cases.^{15,16} As a result, the disruptive innovators target their care at simpler cases and lower risk patients for treatment in technologically less sophisticated sites (which may entail less backup and potentially lower quality), leaving the more complex and higher severity patients in traditional sites with such backup.

Fourth, most provider sites—both disruptive and traditional—tend to avoid lower end customer segments, such as Medicaid patients and the uninsured, who are associated with lower reimbursement and higher levels of severity. One exception is RCs, which attract uninsured patients who can pay the out-of-pocket cost for a visit. As a result, such low-end care may not exert much of an impact on the volume and business models of providers in traditional settings.

Recent studies and reviews of the literature support this view that presumptively disruptive innovations like SSHs, ASCs, and RCs are, in fact, not that disruptive. The studies reveal that SSHs (a) have been consistently engaged in patient cream skimming, (b) target patients with more generous insurance coverage, (c) are no more efficient than general medical-surgical hospitals, (d) may in fact incur higher costs per case, (e) have quality outcomes that are the same, lower, or higher than community hospitals, and (f) do not adversely affect the revenues of community hospitals.^{17,18,19} The available research literature on ASCs also suggests favorable risk selection with no overall differences in quality compared to hospital outpatient departments, and no impact

on hospital margins (K. Carey, J.F. Burgess, G.J. Young, unpublished data, 2010).^{20,21,22,23}

Finally, recent studies of RCs have found that they also engage in cream skimming the less severely ill patients but deliver less costly care, controlling for severity.^{24,25} There is some evidence regarding quality standards practiced in such clinics and comparable levels of quality of care relative to physician offices.^{11,14,26,27} However, the clinics seem to attract patients lacking a primary care physician, suggesting they may serve as more of a safety net provider than a disrupter.^{15,28} There is also some skepticism whether retail clinics can expand into more complex types of care and retain their current value proposition, thus limiting their ability to disrupt the status quo providers.²²

Overall, the scope for disruptive innovations in health care may be limited because patients find it notoriously difficult to assess the clinical dimensions of the medical services they buy. In fact, many patients use price and the quality of nonclinical dimensions of care, both of which are easily observed, to infer the quality of the clinical dimensions of care, thus offering few avenues for truly disruptive innovators to attract market share. There also may be no conflict between the disruptive strategy and the core strategy of traditional providers. Mark Pauly advanced a similar argument recently, suggesting that SSHs and RCs may be insufficient to foster change without concomitant changes in financing, organization, and regulation.²⁹ Indeed, the emergence of SSHs, ASCs, and RCs can be viewed as a response to the constraints and opportunities implied by the current financing, organizational, and regulatory regimes of hospitals and physicians.

This discussion can be summarized in the following argument: innovations such as SSHs, ASCs, and RCs are not that disruptive to the business models of incumbent providers.

Strategic response of incumbents to disruptive innovation

An alternative argument is that SSHs, ASCs, and RCs are disruptive innovations that incumbents nevertheless adapt to and counter. Indeed, strategy theory and research suggest that disruptive innovations do not always displace the incumbents. Schumpeter himself noted that large incumbents with capital and market power are in a strong position to exploit new innovation.³⁰ Chandler likewise noted that scale and scope economies may provide incumbents with competitive advantages over new entrants.³¹ Teece argued that firms in possession of specialized complementary assets (eg, access to distribution channels, complementary technologies) and other dynamic capabilities may renew, augment, and adapt their core competencies over time.^{32,33} Mitchell provided empirical support for Teece's views in a study of the diagnostic imaging industry: incumbent manufacturers with strong sales/service networks were less likely to be disrupted by competence-destroying innovations.³⁴

Incumbents may successfully confront disruption in other ways beyond developing new competencies. Following strategic adaptation theory, the firm's performance is a function of the alignment between its external environment and its strategy and internal organization.³⁵⁻⁴¹ External changes that undermine this alignment and the firm's per-

formance—such as disruptive innovations—require the firm to reorient its strategy and reconfigure its operations to achieve a better fit with its environment and thereby ensure its viability and performance.

Over the past half century health care providers have demonstrated their historical ability to reorient their strategies and operations to confront disruptive models of health care financing and delivery. Starting in the 1950s and especially during the 1980s–1990s, physicians developed independent practitioner association models of health maintenance organizations (HMOs) to combat the group and staff model HMOs developed by the Kaiser Permanente Medical Group and the Group Health Cooperative. Beginning in the 1970s, nonprofit hospitals developed federated multihospital systems to combat the perceived threat of the investor-owned hospital chains. In the 1990s, hospitals engaged in local market combinations and integrated delivery networks (IDNs) to combat the growing concentration of insurers, price discounting, and the disruption caused by capitated payment. During the 1990s, hospitals also sought to mitigate the disruption caused by managed care organizations by developing their own in-house health plans. Such plans failed miserably in most cases.⁴² In all of these instances, the response has been strategic and/or organizational reconfiguration to play a smothering defense against the disrupter.

It is possible that incumbent providers might play a smothering defense against SSHs, ASCs, and RCs through a series of strategic adaptations. These can include keeping disrupters out of the market, effectively imitating the disrupters by offering the same innovations as ancillary services, or developing new organizational models to align with physicians. Incumbents might also pare down their services (eg, those that do not generate net revenues) in order to imitate the disrupter and/or to bolster funding for services that directly compete with the disrupter.

These considerations lead to a second alternative argument: potentially disruptive innovations fail to disrupt the market when incumbents strategically adapt to the new entrants and defend their competitive positions by developing new organizational arrangements.

Methods

A field study to evaluate these two arguments was commissioned by the Center for Health Management Research (CHMR), a consortium of hospital systems affiliated with the American Hospital Association and its Hospital Research and Educational Trust. CHMR representatives, including hospital clinicians and executives, funded the study to better understand the possible threat posed by SSHs, ASCs, and RCs. The study was thus initiated under the belief that disruptive organizational innovations might actually be disruptive.

The study rests on a comparative case analysis of 6 hospital systems and 2 disruptive innovation firms across the country. The comparative case design provides the investigators with a level of detail about each case's historical and institutional context that is impossible to achieve in studies that rely on large, nationally representative data sets. The sample, drawn from CHMR member hospital systems, encompasses nonprofit systems from the East Coast, Midwest,

and West Coast (see Table 1 for a description of the 6 hospital markets). The authors conducted structured interviews with chief executive officers (CEOs) and clinicians in each of the hospital systems and CEOs in the disrupter firms. The researchers interviewed 3–4 individuals from each hospital. The interviews focused on the perceived impact of disruptive innovation on hospitals and their relationships with physicians, and the hospitals' strategic responses to the disrupters, including their provision of less profitable services.

The researchers conducted content analyses of the interviews for each hospital to develop a profile of the hospital's strategic response to the disruptive innovations. We did not, however, seek to code or tabulate the interview data, given the small number of respondents from each site. The study is thus largely qualitative, much in the manner of the site interviews conducted by researchers at the Center for Studying Health System Change.²³ It is widely acknowledged that such evidence helps one to understand and explain market dynamics and the patterns observed in empirical studies.

Results

Impact of SSHs and hospitals' competitive response

To understand the possible impact of SSHs, one first needs to understand which physicians set them up and why. Our research suggests that SSHs are set up by "splitter physicians"—physicians who split their inpatient activity across several hospitals. By virtue of splitting and retaining privileges with multiple hospitals, these physicians keep switching costs low and their bargaining power vis-à-vis any given hospital high. They are less loyal to any single hospital and more loyal to themselves by virtue of keeping their feet in several institutions and minimizing their dependence on any 1 institution. Hospital executives estimate that splitters account for less than 20% of their hospitals' admissions. The class of splitter physicians is fragmented, encompassing a large number of physicians with different perspectives and loyalties. They do not act in unison.

Typically, splitter physicians establish SSHs because they want (a) decision-making control over operating room equipment, supplies, staff, training, and availability; (b) predictable operating schedules; and (c) freedom of choice of the latest devices without any hospital pushback. SSHs are not estab-

lished to appeal to customers at the lower end of the market who are not currently served by general medical-surgical hospitals, nor are they established to offer a different set of performance attributes to consumers not offered by traditional hospitals. Instead, they offer a different set of benefits (decision-making control) to a different customer class (specialist physicians). Those physicians refer a different set of (not so sick) patients who may not need the technological backup of traditional settings. These performance differences (ie, potential quality differences) between the traditional and disruptive sites are not the advertised advantage of the SSHs and may be opaque to consumers.

Thus, at first glance, SSHs do not appear to share the characteristics of disruptive technologies. Because the SSH founders are splitters, the hospitals never really had their loyalty anyway. The establishment of an SSH thus further splits the splitter physician's volume, leaving the hospital with a fraction of its original fraction. At the same time, however, SSHs have historically been viewed as a threat by general hospitals, as evidenced by hospitals' lobbying for a moratorium on SSH construction and the American Hospital Association's negative review of their impact. SSHs do not exert a large impact on general hospitals' volume, but can adversely affect their case mix by virtue of cream skimming the healthier (and presumably less expensive) patients.

Regardless of how disruptive SSHs really are, strategic adaptations undertaken by incumbents can either diminish their impact (by virtue of diluting the market share and weakening the cash flow of competitors), offset their impact (by business development or growth of other surgical volumes), or mitigate their impact (by the physician's continued interdependence with the hospital).

The threat of SSHs is also reduced by a series of existing and emerging entry barriers and countervailing forces. First, certificate of need (CON) laws found in a majority of states may actively restrict new hospital entry via enforcement actions or passively serve as a deterrent if still on the books. Second, the moratorium imposed on construction of SSHs by the Federal Government during 2003–2004 while it studied the SSH impact further retarded entry, as did the uncertainty regarding future federal legislation or regulation that might have come as a result of this study. Third, some states have regulations covering new program development that

TABLE 1. DESCRIPTIVE STATISTICS ON HOSPITAL SYSTEMS AND MARKETS

<i>Hospital System</i>	<i>Market 1</i>	<i>Market 2</i>	<i>Market 3</i>	<i>Market 4</i>	<i>Market 5</i>	<i>Market 6</i>
Nonprofit	✓	✓	✓	✓	✓	✓
Religious				✓		
Major Teaching			✓			✓
Region	Pacific	Pacific	Mid-Atlantic	Southwest	Southwest	Midwest
Hospital Market Share (Beds)	<10%	<10%	40%–49%	20%–29%	20%–29%	<10%
Hospital Market Share (Admissions)	<10%	10%–19%	40%–49%	20%–29%	20%–29%	<10%
Market						
HHI (Beds)	<1000	<1000	2000–2999	1000–1999	1000–1999	<1000
HHI (Admissions)	<1000	<1000	2000–2999	1000–1999	1000–1999	<1000
Population 2000 (thousand)	500–1000	1000–1999	<500	<500	<500	>2000
Population 2008 (thousand)	500–1000	1000–1999	<500	500–1000	500–1000	>2000
Specialty Hospitals in Market	0	0	0	1 (Heart)	1 (Heart)	1 (Ortho)

Sources: American Hospital Association FY 2006; US Census Bureau HHI, Herfindahl-Hitschmann Index

lengthen the approval process for new hospitals. Fourth, in states like California, seismic requirements and nurse staffing mandates have increased the cost of building and operating new hospitals like SSHs. Fifth, in some markets, SSH entry was blocked by incumbent hospitals and their close ties with health plans, which refused to contract with new entrants. Sixth, in those markets where SSH chains did succeed with entry, their entry spurred the consolidation of fragmented hospital cardiology programs, leading to some program exits and stronger countervailing forces among incumbent medical-surgical hospitals.

Even with successful entry, some SSHs suffer from self-inflicted (strategic and internal) operating problems that have limited their impact in the market. For example, a large volume of cardiology patients who might be targeted by SSHs come through the emergency department (ED) at community hospitals. Cardiologists who are at once SSH investors and practitioners at those community hospitals still have to treat them there. In addition, many primary care physicians and referring cardiologists want their patients to go to community hospitals where they are used to referring and admitting, and not to the SSHs. Some physician-entrepreneurs who entered new markets made business mistakes that hampered their competitive position, such as buying former medical-surgical hospitals that had closed in order to avoid CON laws. Such hospitals were much larger than normal SSHs and had large fixed costs to support, limiting the returns that physician-investors could earn. More generally, SSHs with physician-investors might often implode due to inflated expectations regarding earnings, Stark II limits on the profits that outside investors can glean from new ventures, and the ease of obtaining managed care contracts. Such contracts are more difficult to obtain because of closed-panel networks, selective contracting, hospital diversification into health plans, close ties between hospital and health plan executives in some markets, and the small size of SSHs, which limits their bargaining power with payers. As testimony to the strength of these payer barriers, one hospital reported that when it bought a majority interest in a struggling SSH in its market, that facility benefited from the community hospital's reimbursement staff, contracts, and billing mechanisms. The SSH's census grew as a result of coverage under more payer contracts and enjoyed a 40% increase in payer rates. This growth reflects the power of the general hospital system's contracts more than the efficiency and quality of the SSH. Freestanding SSHs would likely not enjoy such growth in this market, as evidenced by history.

According to hospital executives, the real threat is when competitor medical-surgical hospitals set up their own SSHs (eg, a cardiac center of excellence, or cardiac hospital within a hospital). In these instances, the SSH enjoys built-in access to existing referral streams from the ED or community physicians. Indeed, this strategy is a popular response by community hospitals to SSH entry.

Community hospitals engage in several other strategies to respond to the threat of SSHs. Hospitals may seek other uses for excess bed capacity via business development ("grow like crazy"), or engage in strategies to retain their surgeons' inpatient volume and lose some outpatient volume. Hospitals may compete by seeking to improve quality or consolidate cardiac volumes by merging with (or affiliating with) programs at former rivals' facilities. Another set of strategies

involves increasing the salaries of cardiac nurses so that they do not defect, or improving related hospital services such as the catheterization lab, cardiology, cardiovascular surgery, and the ED. Finally, hospitals may engage in strategies to raise their rivals' costs by lobbying the state legislature to maintain CON, push for state moratoria on new hospital construction, or informally encourage health plans to keep network panels closed and contracts selective.

Hospital executives report that the threat of SSH entry has imposed costs that are not widely recognized. One downside of SSHs is that they siphon off management time and attention in order to monitor SSH development. SSHs are as much a distraction as a threat. Another cost to incumbent hospitals is that the threat of SSH entry can also favor the physicians' relative bargaining position with their incumbent hospitals because physicians' threats to defect to a SSH jeopardize the hospital's revenues and profits. This may be why community hospitals have found it necessary to invest in medical technologies, emphasize nurse retention, and offer a variety of hospital services.

Not all physician groups and medical specialties benefit equally from the threat of SSH entry, however, as it provides the leadership of the incumbent hospital political cover to shrink or close unprofitable service lines by claiming that the profits used for cross-subsidization are no longer there.

Impact of ASCs and hospitals' competitive response

As with SSHs, one needs to understand the stressors on the physicians who eventually set up ASCs in order to understand their potential impact. One set of stressors concerns coverage. It is well known that physicians are increasingly less willing to take call in the ED. Hospitals may also need specialist coverage in their busy trauma center, in an orthopedics center set up in an indigent area, or in the hospital's own ASC to help supervise residents. All 3 cases require the hospital's physicians to be in more locations doing procedures there, which the latter find distracting from their regular practice. Moreover, physicians may say they cannot handle 2-3 hour sessions in these settings and thus refuse to donate their time.

Another set of stressors concerns surgeons' access to hospital operating rooms (ORs). Although many hospitals are expanding the number of ORs or building their own ASCs, they cannot respond as quickly as physicians or outside entrepreneurs. Executives report that physicians can build ASCs faster than hospitals can put in new ORs. Finally, surgeons pursue other objectives in developing their own ASCs: increased income, ownership, control over OR access, and scheduling convenience. Although surgeons are reportedly otherwise happy with their hospitals, they are perhaps some of the least satisfied members of the medical staff.⁴³

Physician development of ASCs is not a big issue for many of the larger hospitals. One reason is that hospitals have competing agendas ("bigger fish to fry"). These include the installation of electronic medical records, developing their medical networks, customer focus and other transformational change initiatives, six sigma efforts to improve patient flow, revenue cycle management, controlling physician preference items and other supply chain management issues, and rate negotiations with payers.

Hospitals are also quick to point out several hazards in ASC development. First, ASCs are a volume business. Some hospital executives admitted that they made the mistake of building too many ASCs, especially with the same set of physician investors. The result was low volume at each site. Second, hospitals can seek to joint venture with physicians in ASC start-ups; however, the hospital's 40% interest does not make up for the loss of 90% of its own ambulatory surgery volume to the start-up. Hospitals often rationalize that they would lose this business anyway, and so the joint venture allows it to retain something. However, executives state that they still do not know if this is really true. Regardless, many hospitals report that it takes a long time and a lot of investment to backfill the lost outpatient volume at the hospital.

At the same time, hospitals suggest that ASC competition is, by nature, limited. ASCs tend to perform procedures in lower end areas such as endoscopy; ear, nose, and throat; and ophthalmology. They tend to do much less volume in higher end cases such as cardiology, plastic surgery, general surgery, and orthopedics. In some cases when orthopedists have set up an ASC, hospitals have experienced a drop in outpatient orthopedic cases; however, the ASC may add a spine surgeon to its roster who ultimately admits more spine cases to the hospital. Hospitals report they have witnessed less of a volume drop in the higher end cases, but do see overall lower growth rates in outpatient surgery volumes and some cherry-picking of lower severity cases by outside ASCs. Another limiting factor is that ASCs are often set up by splitters, who thus partially reduce their fraction of the hospital's volume. As with SSHs, ASCs may also suffer from overly optimistic expectations. Hospital executives report that although ASCs are profitable, they typically do not meet their forecasted revenue targets. The ASC threat is also mitigated by 2 other factors. In markets with more than 1 large orthopedic group, hospitals do not "face a union" and thus have competing groups to negotiate with. Second, in markets with sufficient patient demand, orthopedists at ASCs prefer to retain a share in the overall inpatient volume, recognize their interdependence with the hospital and the halo effect of the hospital's service on their own practice, and thus reportedly have an incentive to "act in a civil manner."

ASCs do pose a real threat to rural hospitals or smaller community hospitals that derive a larger percentage of their revenue from elective outpatient surgery. This is consistent with earlier evidence that smaller hospitals with high outpatient volume have lower marginal costs and higher margins for outpatient care: such hospitals find it costlier to lose their outpatient business to disruptive innovators.⁴⁴ The ASC threat is thus more acute for community hospital volume than for referral or tertiary volume. ASCs also are a more acute threat than SSHs in that they are easier to set up, yet engage in the same cream skimming practice, leaving community hospitals with the higher severity cases but no higher reimbursement. Multispecialty ASCs pose a bigger threat to hospital outpatient volumes than do single-specialty ASCs. ASCs established by a core orthopedic group as part of a larger facility can also expand into an SSH or "human performance center" that can entice other specialists away to colocate on their campus. The facility thus serves as an ASC with wraparound services. ASCs established by large nephrology groups to serve dialysis patients can lead to lost

volume and revenue for the hospital's vascular surgeons. The threat is increased if the group also adds a transplant surgeon to perform kidney transplants.

Hospital responses to ASCs take many forms, both proactive and defensive. On the proactive side, most hospitals seek to increase their OR capacity, and seek to do so as quickly as possible to discourage physician entrepreneurship. Many hospitals have attempted to coordinate surgery with large physician groups (eg, link up the 2 parties' ambulatory, inpatient, and ASC surgery schedules) in order to free up both physician and OR time for others. Some hospitals have made block time in their ORs available to key orthopedic groups to increase the hospital's attractiveness, or have allowed certain high-volume orthopedists to work 2 hospital ORs simultaneously a few days a month to increase the latter's surgical volume. Other hospitals work with loyal physician groups to (a) develop a joint venture around an ASC (and maybe later on around an SSH with a co-management model), (b) invest in buildings on the hospital campus to attract additional surgeons, boosting hospital volume and keeping surgical business at hospital, (c) build new hospital facilities where the group purchases floors and performs its own imaging, or (d) colocate an orthopedic ASC and SSH site that allows for a smooth transition from inpatient to outpatient care, and to increase physicians' convenience and productivity. Finally, hospitals can help to support physician group expansion by paying a portion of a new hire's salary (eg, spine surgeon, traumatologist) to help staff the hospital's trauma unit and keep the group engaged with the hospital.

On the defensive side, hospitals often engage in various business development activities such as bringing in more surgeons to increase inpatient surgery volume to offset lost volume to ASCs, backfilling the lost specialty volume with other specialties, transferring lower revenue cases to hospital outpatient surgical venues to free up more inpatient surgical capacity for higher end cases (eg, neurosurgery), or attracting patients from outside the region (who tend to be higher severity cases with higher rates of reimbursement). All of these business development activities take time, however. Hospitals also may partner with an outside national ASC development firm to build several ASCs to thwart other firms from entering the market. Many hospitals also have developed centers of excellence (COE) in orthopedics in order to retard orthopedists' efforts to develop an SSH or ASC. The presence of a COE may explain why orthopedists have been slow to set up their own ASC. Hospitals may partner with the surgeon group in a joint venture just to maintain the relationship and/or minimize the loss of volume and revenue to the outside facility.

Impact of RCs and hospitals' competitive response

In interviews, hospital executives and clinicians also suggested that the threat to hospitals posed by RCs is limited. While hospitals may lose nurse practitioners who are recruited away to staff RC operations, they have received no complaints from their primary care physicians, perceived no competition with their primary care physician network, and witnessed no impact on their EDs. The low impact may reflect the RCs' appeal to uninsured patients, which represent new business. The impact of RCs on primary care physicians

is likely to be low in markets with primary care physician shortages and closed primary care physician practices, and where RCs have developed referral relationships with local hospital systems and their primary care physician networks. Indeed, RCs may actually serve as an extension of primary care physician offices for after-hours care. Some pediatricians complain that RCs limit their ability to cross-subsidize other services rendered to patients (eg, responding to phone calls and e-mails) for which they are reimbursed less.

Hospitals appear to have responded to RCs in different ways: make, ally, or deny. Some hospitals and IDNs—like Geisinger and Aurora (neither of which were interviewed)—have developed their own RCs. Others have developed informal alliances with existing RCs to develop referral relationships. Still others dismiss RCs altogether. Those who have launched their own RCs offer several rationales. RCs are viewed as a response to consumerism, as a strategy to increase patient convenience, as a possible source of referrals to the hospital's own physicians, as a relief of bottlenecks for busy physician clinics and acute-care centers, and as a backup to the IDN's physician network.

RCs strongly resemble the "doc-in-a-box" models developed during the 1970s, and they may share the same fate as well. One large RC provider, CVS Caremark, recently announced plans to close 90 of its 550 MinuteClinic locations until a seasonal need (such as the flu) arises. Part of this move stems from less-than-expected demand. Another potential problem facing RCs is the growing interest of state legislators to regulate these clinics and limit their expansion.⁴⁵

Finally, like the doc-in-a-box models and physician practice management companies of the 1990s, RCs may need a large number of clinics within a market to develop good contracting with payers and to gain scale economies.

Impact of disruptive innovations on hospitals' provision of low-margin services

Overall, the interviews suggest that SSHs, ASCs, and RCs pose only modest disruptions to incumbent providers but still evoke strategic responses (both offensive and defensive). One set of strategic adaptations that we have not considered are changes in hospital service mix away from low-margin clinical areas to higher margin areas that subsidize them and are the targets of the disrupters. To the extent that they occur, such investment shifts suggest an effort by incumbents to imitate the disrupters and bolster funding of service lines to compete with them. To investigate this possibility, we asked incumbents about their investments in 2 relatively unprofitable services: psychiatric and burn services.

General medical-surgical hospitals have historically ignored psychiatric services. Such services are often reimbursed below cost and thus require greater infusions of outside capital than more profitable services. They can also be difficult to staff because of the lack of hospital investment in these areas and the hospital's reliance on community physicians (thus avoiding the need to hire a full-time unit chief). Executives state that these services are not entirely cross-subsidized by more profitable business lines and high hospital margins. Low-margin services are also supported by the hospital's mission, donations and foundation support, and investments by the corporate parent in multihospital systems. Nor are these services always unprofitable. In some markets, the burn

and trauma cases can be profitable when the patients are predominantly insured victims in motor vehicle accidents.

Current hospital trends may increase the pressure on psychiatric services. Several hospital executives reported that there is now a move to push these services outside the medical-surgical facilities within a system and make them more self-sufficient. One reason is that inpatient beds are expensive to maintain, and psychiatric services may be a poor use for those beds because they have small patient volumes and big difficulties in covering their overhead costs. As a result, some systems are now establishing freestanding psychiatric hospitals to house these services. Hospital executives now also realize that mental health disorders play a major role in the health status of many of their patients, who get "lost" in the midst of the system's inpatient and outpatient specialty care. As a result, hospitals are seeking to gain greater control over the health of psychiatric patients and get their treatment back in the hands of primary care physicians. It is unclear how primary care physicians will be compensated for treating these disorders and where they will find the time to do so.

Nevertheless, psychiatric and burn care services do not seem to have been greatly impacted by disruptive innovations such as SSHs and ASCs. Faced with fiscal problems, hospitals have elected to do "across-the-board" cuts rather than cuts in less profitable services. Unprofitable services tend to be managed by shortening length of stay, developing discharge capabilities, and reducing supply costs (eg, pharmaceuticals)—similar to the comanagement models used by hospitals to work with clinicians in other service lines. Indeed, in some hospitals the least profitable services can be lucrative areas (orthopedics, spine, neurosurgery) that are poorly managed and have lousy vendor contracts, all of which can be rectified by a shift to comanagement models with joint hospital-physician bargaining with suppliers. Finally, there is anecdotal evidence from some hospital systems that commitment to less profitable services is fostered by the long tenure and commitment to psychiatric care by both the CEO and the chief of psychiatry.

Limitations

This article has analyzed the impact of 3 types of disruptive technologies on incumbents in local provider markets. We have not studied the full range of organizational models that might alter health care delivery such as telemedicine or medical tourism, nor have we studied technology-based disrupters such as personalized medicine or broader forms of disruption recently discussed by Brook.⁴⁶

Our findings are subject to several other limitations. The data presented here are based on interviews rather than empirical analysis of competitive effects. They are also partially based on interviews with incumbents, who might be prone to deny or minimize the disruption taking place before their eyes. The comparative case design suffers from obvious threats to both internal and external validity. Finally, in an attempt to draw generalizations, we have aggregated very different types of disruptive innovations, obscuring some important differences between them. It is easier to compare hospitals to SSHs and ASCs, as they are all institutional structures; the larger RC companies, however, are dissimilar from the predominantly independently-owned primary care offices with whom they compete in terms of both organization

and resource capacity (by virtue of their investment in technology and use of standardized protocols).

Discussion

Our findings provide qualitative evidence to complement the growing body of empirical evidence on the effects of some of these innovations. This qualitative evidence is consistent with the quantitative findings and conclusions regarding the competitive impacts of SSHs, ASCs, and RCs reviewed earlier.

Second, our findings seriously challenge the previously held notion that these new organizational models disrupt traditional health care delivery. Executives and clinicians from the incumbent hospitals in markets where the new models have arisen do not seem particularly concerned about the potential disruption, and not because they ignore or denigrate the latter. Rather, the incumbents recognize that the new models have not demonstrated any real competitive advantage in terms of cost or quality and have not taken away significant market share. One of the trumpeted features of disruptive innovation—improved quality—has not been manifest. Moreover, for at least 1 of the innovations studied here (RCs), there are signs that the disrupters are scaling back their entry strategy and closing down some of their sites.

The incumbents also point out that some of these new models (SSHs, ASCs) have not necessarily targeted new segments of customers not served by the incumbents, but have cherry-picked the favorable risks among existing customers. Given this risk-selection strategy, it is therefore also difficult to argue that they provide lower cost care at a comparable level of quality. That is, there is no evidence of disruption by virtue of tackling the “iron triangle” or “triple aim” of health care (ie, reducing cost without harming quality or access, or improving quality or access without raising costs). The evidence for retail clinics is different in this regard; despite the favorable patient selection, clinics appear to lower costs without sacrificing quality. However, the clinics’ business model may serve only a narrow customer segment that cannot migrate upward to consume more mainstream health care services.

There are other reasons to question the disruptive character of these organizational models. Two of the 3 (ie, SSHs, ASCs) are staffed by the same physicians found in incumbent settings. Thus, while the sites of care have changed, there is no substitution of lower for higher cost personnel and procedures. There is also no evidence that incumbents really ignore these models. Indeed, many incumbents have incorporated these models into their service offerings, co-opting the disrupters in the process. Moreover, the incumbents do not seem to have incurred financial losses by developing their own version of these organizational models, and do not express any conflicts between these models and their core strategies. Finally, the incumbents have sometimes stifled the potential competitive threat posed by potentially disruptive models by keeping or driving them out of the market.

Third, our study suggests several noteworthy observations about the workings of organizational innovations in health care besides the possibility that they are not that disruptive. We have noted that the disruption might be limited to certain types of incumbents (eg, rural or small urban hospitals) and certain types of disrupters (multi-specialty ASCs). Indeed, we have found that, at least among SSHs, the most disruptive models are those developed by the

incumbents. We have also found that the disrupters might themselves be disrupted by their own strategic blunders and/or internal operating problems. Researchers should therefore focus on the implementation and execution of the disruption strategy. Finally, we have found that the models analyzed here are disruptive in different ways than imagined; they distract rather than displace incumbents.

Overall, our findings lend some support to both of our arguments. If true, where might the disruption to health care delivery (if it ever comes) originate? In recent years, the supposedly disruptive effects of new technologies, such as genomics and personalized medicine, have failed to materialize. Another possible source may be changes in insurance and payment, such as consumer-directed health plans (CDHPs) and the push for “bundled payments” (eg, combined Part A and B under Medicare) to organized systems of care. To date, CDHPs have failed significantly to penetrate the insured market and show similar signs of favorable selection. Bundled payments are being rolled out shortly under Medicare’s Acute Care Episode demonstration. Other disruptions encapsulated in the various health reform bills considered by Congress in the Fall of 2009 have disappeared from the final legislation.

In sum, waiting for disruption may be like waiting for Godot. According to Mark Pauly, this situation will continue until people are willing to admit that they would rather save money than save quality.³¹ The US health care industry is known for being resistant to change. We suggest that it is resistant even to the dynamic forces that lead to disruptive change in other industries.

Author Disclosure Statement

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