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Orthopaedic Surgery Under National Health Reform: An Analysis of Power, Process, Adaptation, and Leadership

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Morrison argued that demography, economy, and technology drive the evolution of industries from a formative first-generation state (“First Curve”) to a radically different way of doing things (“Second Curve”) that is marked by new skills, strategies, and partners. The current health-reform movement in the United States reflects these three key evolutionary trends: surging medical needs of an aging population, dramatic expansion of Medicare spending, and care delivery systems optimized through powerful information technology. Successful transition from a formative first-generation state (First Curve) to a radically different way of doing things (Second Curve) will require new skills, strategies, and partners. In a new world that is value-driven, community-centric (versus hospital-centric), and prevention-focused, orthopaedic surgeons and health-care administrators must form new alliances to reduce the cost of care and improve durable outcomes for musculoskeletal problems. The greatest barrier to success in the Second Curve stems not from lack of empirical support for integrated models of care, but rather from resistance by those who would execute them. Porter’s five forces of competitive strategy and the behavioral analysis of change provide insights into the predictable forms of resistance that undermine clinical and economic success in the new environment of care. This paper analyzes the components that will differentiate orthopaedic care provision for the Second Curve. It also provides recommendations for future-focused orthopaedic surgery and health-care administrative leaders to consider as they design newly adaptive, mutually reinforcing, and economically viable musculoskeletal care processes that drive the level of orthopaedic care that our nation deserves—at a cost that it can afford.

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Health-Care's Second Curve

Morrison¹ argued that demography, economy, and technology drive the evolution of industries from a formative first-generation state ("First Curve") to a radically different way of doing things ("Second Curve") that is marked by new skills, strategies, and partners. In the United States today, the surging service demand of an aging baby-boomer generation, the resultant expansion of the Medicare expense segment of the national economy, and the potential for powerful electronic information technology to improve care continuity and reduce process waste are driving the dramatic reform movement to health care's Second Curve.

Today, the U.S. spends more than any other country on its medical care—nearly \$3 trillion per year, or approximately 18% of the gross domestic product^{2,3}. National health spending is expected to grow at nearly 6% per year through 2020, which is roughly two percentage points faster than the growth of the overall economy^{4,5}. At the time of this writing, in 2014, the Affordable Care Act is greatly expanding access to insurance coverage, resulting in an estimated 22.9 million newly insured patients entering a system historically optimized for remedial, not preventive, care^{5,6}. As health-care utilization continues to escalate, current payment and provider systems will become overwhelmed.

Despite this high rate of national investment, the current U.S. health-care system produces highly variable quality-of-care outcomes that, when examined overall, compare unfavorably to the outcomes of other industrialized nations that spend far less⁷. Research suggests that U.S. physicians in lower-cost regions of the country order evidence-based testing and treatment just as often as their colleagues in higher-cost regions, but avoid providing care that is not well supported by existing evidence⁸⁻¹⁰. Such regional comparisons indicate that nearly one-third of health-care costs can be saved without depriving patients of beneficial care if physicians in higher-cost regions practiced the evidence-based ordering behavior of their colleagues in lower-cost regions. Such discrepancies are maintained by the historical First Curve "fee-for-service" payment model that rewards increased production of units of service at each stop along a discontinuous pathway of care.

This pathway can be understood as a "zero-sum" system in which providers compete for, rather than create, value, with gains realized by one party along the continuum coming at the expense of another¹¹. In our current health-care system, this results in cost-shifting among payers, patients, health plans, and hospitals¹². By giving providers an incentive to maximize the quantity of care rather than the quality of care, the fee-for-service model hampers the effort and innovation required to produce optimal overall systemic quality outcomes^{12,13}. Competition must be realigned as a "positive-sum" system, where value is consciously created by all participants. This paradigm means that providers, health plans, and suppliers producing high quality and customer value are rewarded, while those that fail to demonstrate good results ultimately cease to provide a particular facet of care. The creation of systemic value is a Second Curve strategy in which both adaptive providers and their patients win^{11,13,14}.

A further implication of health reform is that supply-driven delivery of care, where physicians and hospital staff are organized into departments reflecting traditional medical specialties, is outdated. Such organizational structures often induce an environment where service delivery is highly variable, ultimate patient-centered outcomes are largely unmeasured, and attempts to standardize care processes are regarded with skepticism or resistance¹⁵. Such an organization is particularly inefficient in the coordination of care across time and geography, as poor information sharing and overlapping, redundant, or conflicting treatments are manifestations of a fragmented-care First-Curve delivery system^{16,17}.

To create health-care quality and value in the Second Curve, care delivery needs to be restructured to provide better integration of disease prevention, management, and rehabilitation^{18,19}. Providing the most effective care for a medical condition requires a team of health professionals who are focused on the entire cycle of care²⁰. Such a system integrates delivery on the basis of specific medical conditions and includes the full range of clinical expertise, technical skills, administrative leadership, and specialized facilities needed to address all of the patient's needs over a longer time period²¹. The change from practicing a medical specialty to organizing around medical conditions will shift affiliations away from traditional departments toward the network of physicians and other health-care professionals who are jointly responsible for care cycles. This approach will require that physicians realign their practices away from traditional divisions of specialties toward interdisciplinary integrated practice units focused on patient-centered primary medical conditions and prevalent co-occurring conditions²⁰ to achieve outcomes that customers value²².

Centers implementing these systems have produced higher clinical quality and safety and better patient satisfaction at lower cost¹³. Virginia Mason Medical Center reported that an integrated team approach to headache treatment increased evidence-based pathway adherence from 59% to 100% in four months, while costs and unnecessary patient exposure to imaging radiation declined^{23,24}. Despite such evidence, new models of care often face resistance from physicians who are concerned about encroachment on professional autonomy, reduction of individualized patient care, and/or perceived dangers associated with unfamiliar organizational cultures^{15,25-27}.

The Forces of Change

The movement from a First Curve (fee-for-service) to a Second Curve (fee-for-value) framework drives a new set of future-state assumptions for health-care providers: serve more patients; at higher levels of quality, safety, and service; at lower cost; in systems of care that are less hospital-centric; and with value being defined by the patient, not the provider²⁸.

Porter²⁹ described five forces that shape strategic adaptation in industries that are undergoing dramatic changes similar to the changes now being experienced under health reform (Fig. 1).

Under First-Curve dynamics, orthopaedic surgeons were able to exert supplier power to attain competitive advantage

The Five Forces That Shape Industry Competition

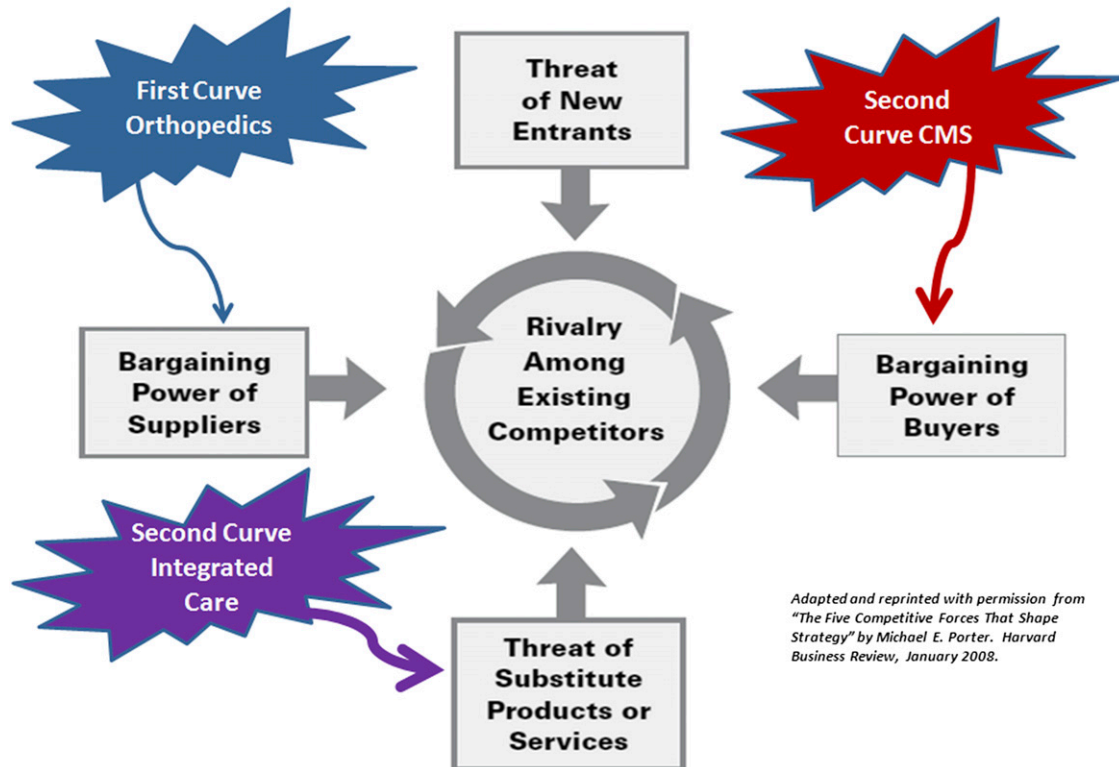


Fig. 1

Porter's five forces and orthopaedics in the second curve. (Adapted and reprinted, with permission, from: Porter ME. The five competitive forces that shape strategy. Boston: Harvard Business Review. 2008 Jan;86[1]:78-93, 137.)

relative to hospital and payer systems. To extract favorable incentives or work conditions, orthopaedic surgeons successfully leveraged not only their ability to supply specialized expertise for highly technical and sought-after clinical services, but also the threat of dynamic reallocation of their services and patient referrals to other competing hospitals or payer panels. This left hospitals and payers to fight among themselves as rivals to best meet the demands of orthopaedic supplier power. Two important net side-effects are notable in such a system: (1) the reinforcement of superficial, short-term, tactical relationships between orthopaedic suppliers and hospital venues of care, and (2) incremental growth over time in the net, system-wide cost burden of providing orthopaedic care.

In the emerging Second Curve facing orthopaedics, strategic advantage has greatly shifted in favor of a Centers for Medicare & Medicaid Services (CMS) that is willing to deploy new mechanisms of massive buyer power to shift the equilibrium. The mechanisms underlying this shift include mandated conditions of participation, new systems of pay-for-performance, bundled payments across providers and episodes of care, and the rapid growth of accountable care³⁰. Even First-Curve premises about the superiority of clinical outcomes associated with orthopaedic surgical intervention as compared with the outcomes obtained with less-costly nonoperative treatments are under

scrutiny³¹. The dramatic and rapid elevation of CMS buyer power directly challenges the historical supplier power position of orthopaedic surgeons, and simultaneously energizes the systematic adaptive generation of innovative substitute provider networks and products to meet the demands of the new health-care environment.

Adaptive professional repositioning to structural change of this magnitude will not be easy, especially when the former system has worked so well for many orthopaedic surgeons. Several pathways of response can be predicted with confidence. First, resistance to change, and associated negative behaviors, should be anticipated during the migration to this new state of affairs. Second, aversion to loss and preservation of personal security is an extremely powerful human motivation, and this motivation can be utilized proactively in the movement to adaptation³². Third, development of new selective forms of integrated partnership between orthopaedic surgeons and hospital administration offers promise and opportunity for both.

Minimizing Development of Change-Resistant Organisms

Resistance is best interpreted as a signal that the change that is being called for challenges the current status quo of the resisting agent. In this regard, resistance is a sign that the change has

relevance for the agent, and the vigor of resistance is an indication of the perceived potential for harm or loss that would accompany those changes. In the case of the orthopaedic surgeon, resistance is the behavioral attempt to ward off threats to his or her long-standing supplier power.

Smith³³ described six hierarchical layers of resistance manifested by persons who have been challenged to change: (1) We do not agree on the nature of the problem; (2) We do not agree on the direction of the proposed solution; (3) We do not agree that the proposed solution will solve the problem; (4) The proposed solution is feasible but will create other serious problems; (5) The proposed solution is feasible but will not work here because there are too many obstacles or because the situation here is unique; and (6) Unverbalized fear.

Many of these levels of resistance can be successfully overcome with systematic, fact-based approaches that mimic the scientific method at the heart of medical practice. The lean six-sigma improvement methodology deploys an objective DMAIC (Define-Measure-Analyze-Improve-Control) framework of problem solving that has shown great success in transforming industrial manufacturing and now health-care systems^{34,35}. Here, process variation is understood to produce outcome variation, and is therefore the antithesis to the provision of quality and customer value. Evidence-based practice, implemented through the lean six-sigma approach, is a true Second-Curve strategy that will eventually supplant the individualized “eminence-based practice” that is still commonplace in the U.S. In our experience, lean six sigma is particularly successful in counteracting the first five layers of resistance because of its objective data-driven approach and its focus on production of timely and lasting results.

Too often, well-meaning change efforts by health-care administrators have produced change-resistant physicians as an unanticipated by-product. This is because the projects for which their help was sought had vague objectives, poor change designs, significant time commitments, and meager results. Furthermore, these designs often reinforced physician concern that cost reduction would necessitate associated declines in quality and service. Compounded over the years, overzealous but poorly formulated attempts to integrate orthopaedic surgeons into hospital improvement teams have contributed to a state of unverbalized skepticism and fear (of wasted time, if nothing else) that has prompted avoidance as well as aggressive forcing behaviors³⁶.

The presence of a superordinate goal that is mutually compelling and attractive to distinct groups but that cannot be attained by the resources and energies of the groups separately offers a powerful impetus for overcoming this final layer of resistance³⁷. Surviving the economic threat of health reform is a salient superordinate goal that is energizing leaders to approach old problems in new, more strategic ways. Offered under the banners of clinical integration and accountable care structures, forward-looking senior health-care administrators and orthopaedic surgeons are coming together selectively to design newly adaptive, mutually reinforcing management teams to drive care that conforms to Second-Curve requirements. Im-

portantly, health-care administrators must approach orthopaedic surgeons with objective, practical, timely, and patient-centered priorities. In turn, orthopaedic surgeon leaders must forego retro-successful tactics designed to maintain personal autonomy and homeostasis via the mechanisms of supplier power. Together, health-care administrators and orthopaedic surgeon leaders must embrace new data-driven, positive-sum, process-optimized partnerships. In this way, success in the Second Curve can be achieved by those who together leverage their substitute power by bringing new, value-oriented products to the health-care marketplace.

Musculoskeletal Integrated Care Pathway as Substitute Product

Musculoskeletal care has been identified as a top priority for quality improvement and cost containment by CMS and other public and nongovernmental payers³⁸. Integrated care pathways are protocols or algorithms that detail essential steps in the care of patients with a specific clinical problem across the entire episode of care. Used to translate national guidelines into local clinical practice protocols, integrated care pathways also improve systematic clinical data collection and abstraction for the purpose of auditing and promotion of change in practice. Overall, orthopaedic integrated care pathways are effective at reducing hospital charges, length of stay, and joint implant cost without negatively affecting complications and outcomes³⁹⁻⁴⁶. While evidence points to the successes of care pathways, the quality of medical documentation in integrated care pathways may be poorer than with traditional medical records⁴⁷. Therefore, clinicians should remain vigilant that the need for precise documentation to accurately communicate and depict patient progress remains even after the migration to evidence-based pathways.

Our experience in advancing standardization and integrated pathways has yielded valuable insights. In a voyage that has been both frustrating and rewarding, we have learned that there is no standard blue-print for implementing change, yet there are common characteristics that underlie success. Strong leadership and teamwork are vital, so it is important to pick partners wisely on the basis of the skills that are needed for success in the Second Curve. Gawande⁴⁸ points out that the orthopaedic surgeon has historically been selected, trained, and reinforced to be an independent thinker and actor. The superimposed reductions in autonomy, compensation, and supplier power driven by health reform make selecting those partners with the best ability to adapt to the new requirements of leadership extremely important. In turn, hospital administrators bring value to the relationship when they deliver organizational structures, information systems, change processes, and strategic business leadership to drive the identified clinical outcomes⁴⁹.

Once established, the team must share a sense of urgency for action, a vision for the desired end-state, and high leverage progressive interim goals that require persistent, dedicated collaboration⁵⁰. In addition, leaders must anticipate and plan for resistance and use data to illuminate the path

to the agreed-upon superordinate goal rather than to bolster the personal agenda or opinion of some team member(s). To create buy-in and team cohesion, data explorations should be coordinated by those asking for the data. This accountability will yield more thoughtful requests and better overall group outcomes. Finally, use the team structure to facilitate discussion, productive problem-solving, and compromise. Anticipate and redirect use of habitual supplier-power behavior by some member(s), using the expertise and social dynamics of the group. By continually reinforcing the new collaborative leadership structure, new value-driven integrated musculoskeletal substitute products can be brought to the market, and success will accrue to everyone working responsibly to reach this goal.

Conclusions

Under the new economics of care, it is vital that orthopaedic surgeons and hospital administrators form new alliances to coordinate the musculoskeletal care of an aging population at a lower cost, at higher quality, and with a longer durability of outcome. In our view, the interdisciplinary musculoskeletal integrated care pathway is a viable substitute product for health care's Second Curve, and it affords avenues for success to those able to adapt to its requirements. The greatest barrier to successful, broad-based adoption of such pathways stems not from lack of empirical evidence for their design, but from resistance by those who would execute them. Development of new leadership structures that integrate future-focused orthopaedic surgeons and hospital administrators is as important as the care pathways themselves and will require moving beyond habitual behaviors better matched to First-Curve dynamics. Lessons from the five forces that have shaped competitive advantage

in other industries offer a useful template for recognizing and overcoming these potential barriers. Finally, an increased understanding of the nature of change resistance and competitive strategy can inform the larger national conversation on how best to provide the level of orthopaedic care that our nation deserves, and at a cost that it can afford. ■

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