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EDITORIAL

Comparing health systems around the world always provides fodder for reflecting on our own healthcare system. Recently, I had the opportunity to visit Sweden with students from my university to explore that country's health system. Among the many interesting things learned, several stood out. First, Swedes love to collect, analyze, present, and disseminate data—data that are used to support consumer choice, inform policy decisions, enhance quality improvement efforts, and decrease costs. Second, practically all of the healthcare leaders we met were, first and foremost, clinicians whose management education consisted primarily of workshops, in-services, and on-the-job training—which made us wonder about the content of and even the need for formal programs in healthcare management education in that country. Third, as in the United States, Swedish healthcare leaders face substantial resistance to organizational change (improvement) interventions. Last, they appeared to emphasize professional culture and intrinsic motivation as important design elements in physician incentive systems.

The articles in this issue of the *Journal of Healthcare Management* address all of these topics, plus a call to ensure an adequate number of highly qualified and diverse new entrants to the healthcare executive ranks, new strategies for enhancing the sustainability and competitive advantage of accountable care organizations (ACOs), and factors associated with achieving Medicare meaningful use incentive payments.

Our interview is with Charles R. Evans, FACHE, president of the International Health Services Group and senior advisor at Jackson Healthcare in Atlanta, Georgia. Mr. Evans discusses his long and varied career as a healthcare executive, leadership lessons acquired from his work in the developing world, and his thoughts on the future of healthcare.

Our Implementing Healthcare Reform columnists for this issue, John Delmatoff and Ian R. Lazarus, FACHE, contend that healthcare leaders today face unprecedented challenges in overcoming employee resistance to change and may not fully comprehend the strength of that resistance. Using a mini-case as illustration, the authors demonstrate how the concepts of emotional and behavioral intelligence can serve as a valuable tool for addressing this issue.

Our Careers columnist, Etheline Desir, reflects on those characteristics necessary to allow graduate students, particularly minority and low-socioeconomic-status students, to successfully transition to a career in healthcare administration. She notes that the onus for ensuring a strong pipeline of qualified and diverse leaders falls on the healthcare industry, university programs, and the students themselves.

The first place–winning essays of the 2014 Richard J. Stull Student Essay Competition in Healthcare Management are included in this issue. Undergraduate essay winner Mary J. Wills considers the promise of data analytics in making actionable information available to healthcare leaders and explores three forms of data analytics: small data, predictive modeling expansion, and real-time analytics. Graduate essay winner Michael Alex Macfarlane proposes a strategy, adapted from the disciplines of agile software development and Lean product development, by which ACOs

can engage customers in the creation of new products that will provide sustainability and competitive advantage to the organization.

Mark L. Diana, PhD, et al. identify factors associated with hospitals that achieved Medicare meaningful use incentive payments under the Health Information Technology for Economic and Clinical Health Act (HITECH) of 2009. They also observe that the HITECH incentive program has not induced hospitals without an electronic health record system to adopt and become meaningful users of the technology.

Utilizing a sample of physicians employed at an academic medical center in Germany, Katharina Janus, PhD, identifies the dimensions of professional culture influencing physician intrinsic motivation. Implications for managing physician motivation through professional culture are provided, as are insights on how healthcare organizations can design these effects into their incentive systems.

Finally, this issue includes an abstract of an Academy of Management article by Benjamin B. Dunford et al. titled "Can Entire Departments Be Burned Out? A Conservation of Resources Perspective on Burnout Contagion."

Stephen J. O'Connor, PhD, FACHE
Editor

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Interview With Charles R. Evans, FACHE, President of the International Health Services Group and Senior Advisor at Jackson Healthcare

Charles R. Evans, FACHE, is president of the International Health Services Group (IHSG), based in Alpharetta, Georgia, and senior advisor at Jackson Healthcare, in Atlanta, Georgia. IHSG is a social enterprise he founded in 2007 to support health services development in underserved areas of the world. Its mission is to work with established organizations to enhance their healthcare management and development capabilities as they seek to attain their broader missions. Jackson Healthcare is a consortium of companies that provide physician and clinician staffing, anesthesia management, and healthcare information technology solutions.

Mr. Evans's previous professional experience includes positions at HCA (Hospital Corporation of America), where he managed a number of company divisions and, in 2004, was named president of HCA's Eastern Group. Prior to his work at HCA, he held executive positions in a number of not-for-profit community hospital settings. A Fellow of the American College of Healthcare Executives (ACHE) since 1999, Mr. Evans served on ACHE's Board of Governors from 2004 to 2007 and as its Chairman-Elect, Chairman, and Immediate Past Chairman from 2008 to 2011. He currently serves on the organization's Counselors Committee. In 2014, he received ACHE's Gold Medal Award in the nondelivery healthcare organization category. The Gold Medal Award is the highest honor bestowed by the American College of Healthcare Executives on outstanding leaders who have made significant contributions to the healthcare profession.

Mr. Evans, a native of West Virginia, earned an undergraduate degree from West Virginia Wesleyan College; he received his MA from Indiana University of Pennsylvania and his MBA from Indiana University.

Dr. O'Connor: *Congratulations on winning the Gold Medal Award! You have had an exceptional career. Tell us about your beginnings and what attracted you to the field of healthcare management.*

Mr. Evans: My early career was in community mental health services and programming for emotionally disturbed children. I directed the Columbia-Montour-Snyder-Union Mental Health, Mental Retardation, Drug and Alcohol Program, a four-county board of county commissioners in rural central Pennsylvania (the term *mental retardation* in the commission's name has since been changed to *intellectual disability*). In that role I worked closely with Geisinger Medical Center, which

provided our inpatient hospital services. I loved my work with physicians and administrators and my involvement with the hospital. Through that experience, I decided that hospital administration was my calling. I went back to school to recredential for a hospital administration career.

Dr. O'Connor: *What is the greatest challenge you have confronted during your career?*

Mr. Evans: This question affects me on two levels. First, on a personal competency level, I have felt challenged in terms of—and have worked my whole career on improving—my listening skills. Most of us are much better at talking than at really listening effectively to what others are saying. I have given a lot of effort to this. In fact, I took a 50-hour course that was mostly about listening skills and listening more effectively.

A second challenge was an experience I faced early on in central Pennsylvania. One of the programs we created and managed was a community-based residential service for deinstitutionalized intellectually disabled women who had previously been institutionalized for many years. At that time, the state had initiated a major program to transition these women into more appropriate settings than institutions; in today's world, they would not have been institutionalized in the first place. I was shocked at the tremendous community resistance to creating the programs. These were small, three-person apartment programs that were staffed, so it was a very safe and well-managed environment. But misinformation was circulated, and continued to circulate, indicating a great need for community education and for systematic, ongoing communication to effectively counter the misinformation. That challenge taught me the lesson of persevering to do the right thing, even in the face of significant resistance.

Dr. O'Connor: *Your experiences as a healthcare executive in both the for-profit and not-for-profit sectors have been extensive. Please contrast those experiences for us.*

Mr. Evans: This question is difficult to answer because people have such strong opinions and feelings on the subject. Often these opinions and feelings are misplaced, but they are nevertheless strong. Both ownership types have strengths and weaknesses, but it really comes down to the organization itself and not so much the ownership model. I discuss my experiences on both sides of the health services ownership model in a very positive way because they have been extremely positive. As you know, it is a mistake to generalize across health services organizations. However, in my experience, I noted some general attributes as particular strengths. The not-for-profits tend to be more effective at maintaining a longer-term perspective. They are able to create, in many instances, a greater sense of community ownership in their organizations because they have local community boards with fiduciary responsibility and are actually owned by the community. Furthermore, as I have observed throughout my career of more than 40 years, the not-for-profit healthcare organizations may provide more stable leadership at the hospital level.

The for-profit hospitals, in my experience, typically incorporate greater accountability within their operations, although there are some major exceptions to this. However, generally speaking, they are highly accountable organizations that display

great rigor in their operations and a sense of urgency for those activities judged necessary to change and for actions that need to occur. They are very effective at moving swiftly, in a highly organized manner, to bring about the necessary changes.

Dr. O'Connor: *What leadership lessons have you learned from your work in the developing world? What can we in the United States learn from global situations and occurrences? What can the world learn from the United States?*

Mr. Evans: I am going to point to several examples. First, I have a project in Nakuru, Kenya, where a very poor group of people is accomplishing great things for the community. A group of women there told me how they managed to accomplish so much with so little. One of them said, "You have to understand, we love with all our hearts." I thought it was such a critically important reminder for us. Most of us in healthcare, whether we have clinical or administrative roles, got involved because of the love for our communities, the love for our neighbors, and our commitment to take great care of them. As our business has become more complex, competitive, and challenging, the loss of that perspective has weakened us as a field. There is such great power in staying connected to, and maintaining awareness of, the love for our communities and why we are doing this work.

I am working on another project in the Dominican Republic. One physician there absolutely overwhelms barriers that he and his group encounter because of his positive, can-do attitude. As we encounter obstacles and unexpected challenges, maintaining a strong, positive mind-set can be a hugely powerful force within an organization. In many cases, it enables an organization to accomplish things it might otherwise not have, especially if the leadership did not maintain a positive attitude.

What the world can learn from the United States has to do with management capacity. Many of the healthcare delivery leadership positions around the world, whether they are in governmental or private organizations, are filled by clinicians, most of whom have had little or no preparation for the management aspects of their work. This situation is talked about globally now in terms of the need for management capacity building in the underserved, low-income areas of the world. The United States has this great talent pool of management competencies, skills, and learnings and the opportunity to take that to the world and enhance health services as we help to build management capacity.

Dr. O'Connor: *Peering into the future of healthcare, what are some things we can count on happening? What are some things we might not see coming?*

This is an interesting question. In terms of what is coming for sure, global quality improvement of health services is an increasingly solid reality. We are getting better in this country, but we are also getting better around the world in terms of the quality of services provided. This trend obviously marks a very positive development. I look forward to watching it gain momentum and to being a very small part of it through the rest of my career. The recent annual letter from the Gates Foundation regarding advances in global healthcare was quite encouraging.

In the United States, I expect a dramatic move toward home-based, nonhospital-level care. This shift will be enabled by a combination of advancing technologies and the availability of information to allow for all kinds of virtual care to be routinely delivered. Over the next 5 to 8 years, it will become increasingly common for us to receive care from someone who is in a remote setting. We may be sitting at home or in some other community setting, but I think that virtual services will be provided in many, many ways.

We will also see enormous advances in clinical medicine over the next 10 years. It will be great fun to be a part of it. It will add value to our country's healthcare delivery system and to those around the world.

One trend that we are not totally expecting is that some international models of health services delivery will be adopted in the United States. In this country, we have a tendency to perceive that people around the world are watching us and developing services based on what we are doing. However, I think we are likely to see new service models based on what others are doing internationally. Notably, some major clinical programs in India providing eye care and cardiac care are likely to be replicated here, either independently or with U.S. partners.

Finally, opportunities for young healthcare professionals in the management arena will increase in other parts of the world. There is a tremendous, pent-up need for professional healthcare management globally, and we in the United States have a lot of it. It is likely that U.S. healthcare management graduates will increasingly pursue openings abroad.

Dr. O'Connor: *What topics and issues would you like to see addressed by authors in the* Journal of Healthcare Management*?*

Mr. Evans: Three topics come to mind. One that I think would be of great interest is to take a look at the low-cost, high-impact clinical models, such as those in India mentioned earlier, and consider their implications in the United States. A second topic is the movement to home-based care and the enabling technologies surrounding it, the implications of it for our institutional model, and how to think about these developments.

A third topic relates to the value that accrues to U.S. parties that are engaged in partnerships with hospitals in developing countries. We can often clearly articulate the benefits to the partner in the developing country, but the value to the U.S. partner is not always as clear to us. As we in the United States become more involved in these partnerships, we need to understand the benefit to both parties. We are a bit behind the curve on this. Europe, particularly Great Britain and France, has been actively involved for years in developing institutional partnerships, and it has greatly benefited their own systems. I think that would be an interesting topic to explore.

The Most Effective Leadership Style for the New Landscape of Healthcare

John Delmatoff, president, PathFinder Coaching, Murrieta, California, and
Ian R. Lazarus, FACHE, managing partner, Creative Healthcare, Del Mar, California

When leaders in healthcare organizations are asked, "What's the one word that best characterizes the impact of the Affordable Care Act (ACA) on the U.S. healthcare delivery system," most will answer "Change." And when mid- to lower-level employees in those same organizations are asked to describe the one thing they dislike or fear most about the ACA, they, too, say "Change." As if they are not already challenged by implementing the ACA, today's healthcare leaders are faced with the challenge of overcoming staff's resistance to change. Furthermore, too many leaders do not understand just how change resistant many of their employees are, although these employees are the very people who will be charged with implementing the tremendous changes the ACA will require.

Some leaders have tried to persuade their staff that surviving healthcare reform is the latest burning platform threatening the prosperity and security of their organizations. But they generally find that change management challenges, such as ACA implementation, do not come with a one-size-fits-all solution or that their staff do not view the ACA as "their problem."

WHAT'S A LEADER TO DO?

Changes in every aspect of healthcare delivery—from reimbursement to quality control to elimination of wasteful and inefficient practices—are having a tremendous impact on the U.S. healthcare delivery system, with many more changes to come. But the impact of all of these changes on the people who will be implementing them may get overlooked in all the haste for compliance. Add to the mix the initial rocky launch of the reform law and uncertainty regarding its sustainability, and the suggestion that a profound shift is ahead could easily be regarded as an understatement.

People at every level of provider organizations are stressed, confused, and bewildered by the blizzard of changes occurring, and many—perhaps most—are ill suited to absorb these changes, and the organizational dysfunction that will likely accompany them, easily or gracefully. The result is a growing insecurity, anxiety, and outright resistance among these workers, leading to a demoralized workforce and compromised compliance.

Healthcare leaders must understand the value and critical importance of delivering an *emotionally and behaviorally intelligent style of leadership* to ensure that their staff feel empowered and supported as they work through and implement some of the

greatest changes in the delivery of healthcare in this country since the introduction of Medicare. For many leaders, maintaining the status quo in their leadership style simply will not get the job done.

WHY EMOTIONALLY AND BEHAVIORALLY INTELLIGENT LEADERSHIP?

In 2003, the *Harvard Business Review* examined data supporting emotional intelligence. In that article, it stated that:

> In hard times, the soft stuff goes away. But emotional intelligence, it turns out, isn't so soft. If emotional obliviousness jeopardizes your ability to perform, fend off aggressors or be compassionate in a crisis, no amount of attention to the bottom line will protect your career. Emotional intelligence isn't a luxury you can dispense with in tough times. It's a basic tool that, deployed with finesse, is the key to professional success.

While some leaders may deem the subject of emotional intelligence to be too "squishy" for any practical value in leading people, enlightened leaders in business, industry, and even the military are finding strong value and return on investment in not just understanding emotional intelligence but incorporating it into their leadership style.

A study by the Center for Creative Leadership (2010) reported that the need to improve skills in leading employees and work teams was a top priority among senior healthcare leaders. However, those same leaders indicated that such skills—including self-awareness—were rated the *lowest* of those regularly demonstrated by leaders in healthcare.

In his book *Primal Leadership*, Daniel Goleman (2002, p. 8) refers to a concept he calls "leadership contagion." He states that "people take their emotional cues from the top. Even when the boss isn't highly visible—for example, the CEO who works behind closed doors on an upper floor—his attitude affects the moods of his direct reports, and a domino effect ripples throughout the organization's emotional climate." Imagine a leader who feels (understandably) overwhelmed by the implications of the ACA on his organization and unintentionally projects his angst onto his direct reports. Those direct reports then project that angst onto the people they supervise, and the entire organization is affected.

Of course, leadership contagion can also work in a positive manner. And that is where emotionally and behaviorally intelligent leadership can have a strong impact on an organization, starting at the top.

WHAT IS EMOTIONAL AND BEHAVIORAL INTELLIGENCE?

Because emotion is an internal process and cannot be seen by others (other than in the behaviors that those emotions generate), leaders must move from *emotional* to *behavioral* intelligence in order to realize the desired effects. And this is where the

leadership game is won or lost: It is not enough for a leader simply to understand the effect of emotions on his style; he must move from *internal* (and unseen) *emotion* to *external behavior*—what people see, hear, and respond to.

Self-Awareness

Emotional and behavioral intelligence (EQ/BQ) starts with self-awareness, or an objective understanding of one's emotional and behavioral wiring. Self-awareness requires recognition and acceptance of the effect that an individual's behavior has on others so that the individual can then mitigate those undesired effects.

Social Awareness

But self-awareness is only the beginning. The EQ/BQ leader must also be *socially aware*. That is, she must understand the behavioral attributes and needs of the people she leads. In today's change-oriented healthcare environment, it is critical that healthcare leaders understand (be socially aware of) the behavioral makeup of their organization's employees. One way by which to accomplish this critical task is to use a strongly validated 4-dimensional psychometric instrument. Such tools, when utilized properly, can accurately identify which individuals may be more affected by change than others. In fact, anecdotal evidence gathered by us over the past 12 years working with provider organizations of all sizes indicates that the preponderance of mid- to lower-level hospital and health system employees can be characterized as strongly change resistant.

These are often individuals who

- are sensitive to needs of other people (helpers), which is why they chose a career in healthcare;
- prefer to follow rather than lead;
- can be very uncomfortable with change, especially when pushed to conform or adapt quickly;
- often mask their true feelings to avoid conflict or confrontation;
- prefer a structured, organized, and predictable work environment; and
- want to do things "right" and require a suitable amount of time to do so.

The leader who implements the changes driven by the ACA without taking into consideration the behavioral needs of his employees will likely encounter resistance, confusion, and a demoralized workforce (Lazarus, 2013). Such individuals can needlessly complicate or hinder these efforts. By embracing an EQ/BQ approach to leadership, executives can mitigate many of the difficulties associated with change and foster an organizational culture of support, empathy, and shared success. When leaders drive emotions and behaviors positively, they bring out the best in the people who follow them.

A CASE STUDY OF EQ/BQ IN HEALTHCARE LEADERSHIP

To test the effectiveness of EQ/BQ training on the ability of leaders to address the challenges of healthcare reform, a program was created for a small management team at Loma Linda (California) University Health (LLUH). This team was composed of departmental leaders, all of whom will soon need to accept and initiate a broad range of changes that will affect every aspect of their operations, from actuarial modeling and forecasting for their health plan to integrating the focus on wellness into the care delivery models to the point of flipping the emphasis and resource allocations. To stay ahead of this wave of change, Chief Financial Officer Kevin Lang engaged a consulting firm to develop a program that included completion of behavioral assessments of leaders and their subordinates. In all, approximately 50 individuals were assessed across the multiple departments in LLUH, who then assembled to review the results, discuss implications, and plan new strategies for moving forward in the new landscape of reform.

"This was an eye opener," said Norma Oros, technical director of Information Services, expressing an emotion echoed by several other participants in the program. "I wish I had this training in my 20s," she added. Oros continued, "Until you understand EQ/BQ, you need to be careful to avoid causing frustration among others [whom] you are trying to motivate. I've come to realize the problem is not with them, it's with me." Norma's arrival to self-awareness was tantamount to, in her words, "being hit on the side of the head with a 2 × 4."

The team at LLUH went deeper into the assessment's findings to evaluate the makeup of subordinates on their teams. Some teams exhibited diverse behavioral styles among their members; some had an extreme concentration of change resistors. Leaders of these teams discussed the new approaches they would take in motivating their staff. "Even if you understood these concepts without knowing what [they are] called, you still need to understand what people need from you as a leader," said Richard Bridges, a supervisor of the IS Service Desk. "And some of those people just need a little more time to absorb the impact of changes we are asking them to make." With this observation, Bridges advanced to an understanding of social awareness.

CONCLUSION

To be sure, any competent leader will admit that the process of leadership development, like continuous improvement, does not end. Leaders in today's healthcare environment need to draw on all the tools available to them to mobilize their human resources and lead them into the new environment. This is not a time to take a one-size-fits-all approach to management. This is a time to apply the concepts of EQ/BQ—arguably a leader's most valuable tool set with which to overcome the most profound challenge of our times.

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For more information about the concepts in this column, contact Mr. Lazarus at Irl@creative-healthcare.com.

Exploring Obstacles to Success for Early Careerists in Healthcare Leadership

Etheline Desir, president, Desir Group Executive Search, Houston, Texas, and Atlanta, Georgia

INTRODUCTION

A young man of Caribbean descent from a two-parent home attended a top-tier pre-med program, majoring in science and language. After graduation, he worked for a year and was quickly promoted into a leadership position. Discovering his natural leadership abilities, he began to explore a career in healthcare management.

He was surprised to learn that his alma mater offered a master of health administration (MHA) program and enrolled immediately—no one on campus had spoken with him about healthcare administration when he was an undergraduate there.

During his time as an MHA student, the young man was accepted to a 10-week internship through the Institute for Diversity in Health Management's Summer Enrichment Program—it was his first experience working in a hospital setting. As a result of his limited exposure to prior healthcare leadership roles, he was later denied acceptance to paid administrative fellowships at two top medical centers.

Compare this young man's experience with that of a minority administrative fellow candidate who had attended a top-ranked graduate school, aced her health system fellowship interviews, completed her fellowship program early, and accepted an impressive position at the health system. The difference between the two is that she comes from a well-educated, influential family that boasts multiple generations of physicians and CEOs. From an early age, she was exposed to healthcare topics in conversations around the dinner table and in social and civic gatherings, with her parents' friends and associates—all this enculturation prepared her to understand the context of healthcare delivery and access. The young man, on the other hand, lacks influential family and friends who could have introduced him to the healthcare leadership context early on.

Considering that the U.S. population is shifting from a white majority to a minority makeup, healthcare leaders from diverse backgrounds will be essential to delivering culturally appropriate care to the chronically ill and the burgeoning elderly population and addressing the shifting health needs of our population. Yet the lack of exposure to the healthcare environment is but one—albeit a crucial—obstacle that many early careerists face as they launch their careers. Will we have enough diverse, *qualified* leadership talent in the pipeline to run our complex, dynamic organizations?

ISSUES SURROUNDING STUDENT PREPAREDNESS

The good news is that the healthcare management field is attracting online, evening, and part-time students in addition to those in traditional, full-time master's programs, which are expected to yield an increasingly diverse talent pool. But my 20-plus years of experience as the head of a search firm known for specializing in, and committing to, mentoring, coaching, recruiting, and placing diverse talent has shown me that obstacles remain for students from diverse backgrounds. For several years, my firm helped recruit minority postgraduates into a competitive, two-year, paid administrative fellowship program for a large health system in the Midwest. We found that selecting even a cohort of seven fellows was challenging. Of the more than 50 postgraduates and early careerists who were vetted, nine were invited to participate in onsite interviews and complete a competency inventory assessment. Unexpectedly for many of the candidates, the overall evaluation scores revealed deficits in communication, analytical, and critical thinking skills—all areas that are vital to effective leadership. The candidates, having performed well in graduate school, were disappointed with the outcome and questioned the validity of the scores. It further confirmed my previous observation that there exists a disconnect between some graduate program requirements and curricula and those of today's health system.

Quality of Unaccredited Health Administration Programs

The recent proliferation of health management programs includes many that lack Commission on Accreditation of Healthcare Management Education accreditation, graduating students who are inadequately prepared. Unaccredited programs tend to impose less rigorous entry requirements, allow more course flexibility, and offer less comprehensive curricula than do accredited programs. Furthermore, because many of these new programs are offered online only, they lack the strong, influential alumni base to support their graduates that is inherent in well-established traditional programs.

Traditional accredited programs need to redesign their curricula as well—and some are already doing so—to keep pace with evolving leadership competency requirements.

Lack of Access to the Context of Healthcare

A huge class and socioeconomic attainment divide separating majority and minority students appears to cut across all levels of program quality. Why? From my perspective in an executive search capacity, I have seen repeatedly that context and other related factors, such as early exposure to healthcare and leader role models, are indicators of whether a socioeconomically disadvantaged student attains and sustains a successful healthcare leadership career.

INTRODUCING STUDENTS TO HEALTHCARE ADMINISTRATION

Addressing the lack of exposure and absence of context that many minority and low-socioeconomic-status graduates have to role models in healthcare leadership

requires a comprehensive approach that is sensitive to students' backgrounds. That access can begin as early as high school, at a time when many multicultural students may not even be aware of careers in healthcare management. The American College of Healthcare Executives (ACHE) maintains a website dedicated to creating awareness of careers in healthcare management among high school–age individuals and offers guidance to baccalaureate students and early to mid-careerists. (Visit www.healthmanagementcareers.org for more information.)

One's first job experience can also be indicative of future success in healthcare leadership, according to a 2008 ACHE survey. If the first job experience of an early careerist from a minority or disadvantaged background is outside the framework of healthcare leadership, that individual's chances of success in healthcare management are diminished. We can improve those odds by leveling the playing field for postgraduate minority students.

ELIMINATING DISPARITIES IN HEALTHCARE LEADERSHIP

After speaking with a broad spectrum of stakeholders, I have concluded that the onus for ensuring a strong and steady pipeline of qualified *and* diverse leaders falls on the healthcare industry, universities, and students.

The Healthcare Industry

Succession plans and leadership development initiatives serve as a structured point of entry for graduates and a process for continued growth, but not nearly enough organizations have developed these pipelines. Thus, they lack the ability to facilitate organic bench strength. Much of this activity still occurs informally, as when influential alumni groom their alma mater's graduates. A more institutionalized process could involve retention incentives for high-potential early careerists offered through a deliberate, systematic approach.

University Programs

Top-ranked health administration programs realized that students with no work experience and few resources needed skills enhancement to compete for positions. One program began conducting networking sessions, resume reviews, mock interviews, and career strategy sessions for them. I believe that a key role of master's programs is to spend time helping students develop a 1- to 3-year career map to prepare them for and understand the types of positions they should be seeking, thus positioning themselves for future success. From my years of intimate engagement with students and early careerists, it is safe to conclude that schools should help first-generation college attendees, most of whom have had little to no exposure to the healthcare leadership environment and seldom know how to navigate graduate school and postgraduate realities.

Students and Early Careerists

Even as early as high school, students should begin considering their end goal. Once they have established that goal, they must show initiative and creativity in their pursuits by demonstrating leadership in extracurricular activities and participating in professional organizations, such as ACHE, the National Association of Health Services Executives, the Asian Health Care Leaders Association, and the National Forum for Latino Healthcare Executives, in order to build a sustainable career network. Professors tend to nominate for competitive fellowships and residencies those students who are involved, active, hardworking, and diligent in their studies, and they are most likely to provide those students with alumni contacts for jobs. Finally, on a more practical level, as early careerists traverse their career, they must be willing to relocate to where the jobs are.

CONCLUSION

Vast resources are available to students, but they must know where to find these resources and how to use them to take ownership for their success. All MHA programs must adjust their curriculum to reflect the changing requirements for healthcare leaders, and the larger healthcare field must establish formalized career development programs for early careerists to sustain organic growth. Another key to assisting students is creating awareness among high school and undergraduate students of the MHA and MPH tracks as viable options, just as the MBA is a recognized path. Finally, all constituencies should address the gaps that exist for people of certain cultural backgrounds and their level of exposure to mentoring, accountability, and opportunities so that we may adequately prepare a cadre of inclusive, multicultural careerists for success.

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ADDITIONAL RESOURCE

Commission on Accreditation of Healthcare Management Education (CAHME). Home page. www.cahme.org.

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Decisions Through Data: Analytics in Healthcare

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EXECUTIVE SUMMARY

The amount of data in healthcare is increasing at an astonishing rate. However, in general, the industry has not deployed the level of data management and analysis necessary to make use of those data. As a result, healthcare executives face the risk of being overwhelmed by a flood of unusable data. In this essay I argue that, in order to extract actionable information, leaders must take advantage of the promise of data analytics.

Small data, predictive modeling expansion, and real-time analytics are three forms of data analytics. On the basis of my analysis for this study, I recommend all three for adoption. Recognizing the uniqueness of each organization's situation, I also suggest that practices, hospitals, and healthcare systems examine small data and conduct real-time analytics and that large-scale organizations managing populations of patients adopt predictive modeling. I found that all three solutions assist in the collection, management, and analysis of raw data to improve the quality of care and decrease costs.

For more information about the concepts in this essay, contact Ms. Wills at mjwills@crimson.ua.edu. Ms. Wills is the first-place winner of the undergraduate division of the 2014 ACHE Richard J. Stull Student Essay Competition in Healthcare Management. For more information about this competition, contact Sheila T. Brown at (312) 424-9316.

INTRODUCTION

By 2015, the average hospital will produce more than 665 terabytes of data, which is equivalent to 697,303,040 megabytes (Pogorelc, 2013). While the volume of healthcare data is rapidly increasing, healthcare organizations are searching for better data management solutions.

The consulting firm Frost & Sullivan (2012) suggests that "while this data is being hailed as the key to improving health outcomes and reducing healthcare costs, the sheer volume of data is so overwhelming that most organizations are unable to take full advantage of it with their current resources." Indeed, one recent survey of physicians and hospital executives found that too much healthcare data is available and not enough applicable information accompanies the data (Wolters Kluwer Health, 2011). Westby G. Fisher, MD (2012), a physician with NorthShore University HealthSystem, based in Evanston, Illinois, says, "There's so much data that we risk getting lost in it." The increasing amount of healthcare data is a pressing concern that must be addressed because it threatens the efficiency of an organization (Burns, 2013).

BACKGROUND

Fortunately for the healthcare industry, the business sector has already addressed this problem. To not only manage the overwhelming amount of data but also improve operations, businesses turned to data analytics (Kayyali, Knott, & Van Kuiken, 2013). IBM defines *data analytics* as "the systematic use of data and related business insights developed through applied analytical disciplines (e.g. statistical, contextual, quantitative, predictive, cognitive, other [including emerging] models) to drive fact-based decision making for planning, management, measurement, and learning" (Cortada, Gordon, & Lenihan, 2012). With the need to become increasingly cost efficient, predict health trends, eliminate waste, and implement effective practices, data analytics offers solutions for improving the quality of care, containing costs, and managing operational tasks (Prewitt, 2012).

One example of the use of business analytics is the loyalty cards Target Corporation uses with its customers. The loyalty cards allow the company to track a customer's purchases and predict future buying trends. Target can send coupons or advertisements to customers depending on their purchasing patterns. Another example in retail is Amazon.com, which uses business analytics to offer personalized purchase recommendations to customers, accounting for 35% of purchases made. Information offered by data analytics allows companies such as Target and Amazon.com to maximize revenue sources and tailor marketing to customers (Datoo, 2013).

While the implementation of data analytics in healthcare is relatively new, it has been met with resistance. The complex nature of the healthcare industry—which includes a provider's desire for independence, inadequate technological infrastructure, and disconnected systems—has, until recently, limited organizations' ability to incorporate the level of sophistication in data analytics that has become common

practice in other sectors (Groves, Kayyali, Knott, & Van Kuiken, 2013).

Further compounding the problem is the traditional mind-set that "all healthcare is local," meaning that healthcare organizations often have felt little need to invest in information technology (IT). This sense of complacency has been shattered by advances in healthcare IT spurred by a variety of government mandates, such as those called for in the Health Information Technology for Economic and Clinical Health (HITECH) Act and the Affordable Care Act. The outcome is the rapid adoption and utilization of IT in the healthcare industry and the resulting proliferation of unstructured data (Burns, 2013). Thus, the stage is set for the application of data analytics in healthcare (Manyika et al., 2011).

Kaiser Permanente, headquartered in Oakland, California, has shown the way forward through its implementation of HealthConnect, which allows for data exchange and integration of electronic health records (EHRs). HealthConnect has saved Kaiser Permanente approximately $1 billion while improving the disease management of patients with cardiovascular disease (Kayyali et al., 2013), as it allowed the organization to track and work with patients to better control their blood pressure, a key risk factor in cardiovascular disease (Kaiser Permanente, 2013).

Brigham and Women's Hospital, in Boston, Massachusetts, uses a balanced scorecard that combines clinical, financial, and departmental data as its data analytics tool. Not only has the balanced scorecard helped reduce average patient length of stay but it has also provided predictive information that helps the hospital determine which departments, treatments, or research areas it should invest in next. The information provided by the balanced scorecard helps track performance trends and works toward reducing infection rates by highlighting areas where care can be improved or greater care or attention is needed, and thus improving overall quality (Mace, 2012).

The question remains, how do practices, hospitals, and healthcare organizations handle the overwhelming amount of data continually accumulating? The answer, as suggested by the retail industry examples offered earlier, lies in data analytics. Data analytics must become common practice in all these types of organizations in order to make sense of the growing amount of healthcare data (Burns, 2013). *Small data analytics*, *predictive modeling expansion*, and *real-time analytics* are three options in the emerging field of data analytics. Each offers a unique approach to managing and analyzing data that would greatly benefit health organizations and practices currently facing burdensome amounts of data.

SOLUTIONS

Small Data

Healthcare leaders are generally aware of big data—the analysis of large amounts of information to highlight health trends, patterns, and possibilities for entire populations or groups of people—but for healthcare managers and organizations, small data may be much more appropriate for translating data to actionable information. In

contrast to big data, small data is the collection of information for a small patient population. Small data offers several ways for a practice, an organization, or a provider to analyze and better understand patient populations. EHRs serve as a tool for collecting and storing patient information, which can be converted to clinical summaries or continuity-of-care documents and then used in small data analytics. For example, small data can be used to highlight the gaps in preventive measures for target and critical patients. Data-driven feedback on possible complications or projected health issues helps emphasize preventive care. As a result, providers may act in a more cost-efficient way to prevent large expenditures that accompany uncontrolled or preventable illnesses (Terry, 2012).

Additionally, small data reports benchmarks or goals for specific patients with chronic conditions. With detailed information on patients, providers are able to monitor and control the conditions. The information shows whether or not treatments are yielding satisfactory results for the patient. When outcomes are unsatisfactory, care managers can then be assigned to better address the condition. By monitoring conditions, providers and healthcare organizations are able to reduce costs in the long run (Terry, 2012).

Small data is an extremely effective tool for primary care management. Unlike big data, small data does not add undue financial strain on a practice or healthcare provider. Instead, it uses the information already collected by EHRs.

Patient-centered medical homes and many small to midsize physician groups are working toward the integration and use of small data. With the detailed information gathered to fulfill Stage 1 meaningful use requirements and through the transition to Stage 2, physicians can extract information about their high-risk patients. By mining small data, they can manage chronic conditions, assign case management, and prevent future complications. Understanding high-risk patients' complex conditions allows for greater quality and cost containment (Kibbe & Kuraitis, 2012).

Small data analytics does not require substantial monetary investments, but certain costs are associated with integrating a small-scale registry, data warehouse, or data repository that mines data from EHRs in addition to the cost of training personnel and changing existing workflows to use small data. Healthcare organizations can choose the data-mining interface most appropriate for their patient populations (Kolakowski, 2012). As with any other change, especially the adoption of new technology, physicians and staff can be resistant. However, this resistance can be overcome if providers are shown the value to patient care quality (Kibbe & Kuraitis, 2012).

Predictive Modeling

Predictive modeling is another data analytics technique focused on forecasting future medical costs. The model uses patients' medical information to evaluate health risks and predict their future medical utilization (Ingenix, 2006). A wide variety of predictive modeling algorithms are available, all of which assign a specific risk level or score to

patients (Asparouhov, 2012). Risk scores are determined by risk markers and are assigned to each patient in a particular population (Ingenix, 2006).

By using past diagnoses, demographic details, and other information gathered from EHRs, predictive models forecast individual patient costs, which can then be used by providers and insurers. Consequently, specific patients needing specialized management come to light (Loginov, Marlow, & Potruch, 2012). Some predictive models identify the 1% of a particular pool that drives the majority of healthcare costs. These high-risk, high-cost patients require extensive time, energy, and resources, increasing the overall costs to the provider or organization (Asparouhov, 2012).

Blue Cross and Blue Shield of North Carolina (BCBSNC) uses predictive modeling to understand the needs of its customers. With data that have already been collected, BCBSNC studies current healthcare needs and predicts future health issues by using predictive modeling, thereby working to prevent future health complications and improving customers' overall health. With 50% of BCBSNC's costs being driven by only 4% of its customers, predictive modeling allows BCBSNC to expect future health trends and implement initiatives to improve health conditions proactively, which reduces costs (Mace, 2012).

Parkland Health and Hospital System, in Dallas, Texas, launched a predictive modeling system created in-house by a staff physician in 2009. The electronic system scans patients' information, identifies high-risk patients, and predicts outcomes for those patients. As a result of the predictive modeling system, Parkland Hospital has saved more than $500,000 since the system's implementation. With a 31% reduction rate in 30-day readmissions for Medicare patients suffering from heart failure, readmission penalty rates are 10 times lower than the national hospital average. The specialized predictive modeling system has also improved Parkland Hospital's ability to monitor patients and to work toward preventing future complications (Jacob, 2012).

If not used appropriately, predictive modeling can have negative consequences. For example, strictly following predictive modeling guidelines may result in decreased attention to patients as unique individuals. Inefficiently implementing a predictive modeling system can result in wasted resources. Most of the drawbacks to predictive modeling can be prevented if the system is accurately applied (Ingenix, 2006). Many different types of predictive modeling algorithms are available for purchase.

Real-Time Analytics

Unlike batch analytics tools, such as small data and predictive modeling, real-time analytics uses immediate information at the point of care. Instead of making decisions in hindsight through the batch method, real-time analytics allows choices to be made at the bedside. Enabling point-of-care decision making holds the potential to truly revolutionize methods of patient diagnosis and treatment (Ozga, 2013). Real-time analytics systems generate updated information concerning a patient's history and current status and

offer suggestions for diagnosis and treatment (Murphy, 2013).

Real-time analytics goes beyond the mere collection of patient data. Although currently a great deal of point-of-care patient data can be obtained from equipment, that information is typically recorded but underutilized. Real-time analytics focuses on the recording of point readings and streaming data, but more important, it analyzes the data at the point of care to present immediate and actionable information for providers. For example, the analysis can show possible drug interactions, suggest treatment methods, and provide alerts for future complications or developments (Taylor, 2010).

Real-time monitoring of patients continually adds information to the ever-increasing supply of data (Taylor, 2010). Tom Olenzak, director of innovation at Independence Blue Cross in Philadelphia, has high hopes for the expansion of real-time analytics. He believes treatment will become more accurate and efficient once physicians can receive real-time information, such as blood glucose levels, about a patient at the point of care.

In another example of integrating real-time analytics, the University of Texas Southwestern Medical Center in Dallas is analyzing data from EHRs. The system, whose deployment is currently limited to readmission rates, helps clinical staff keep track of risks and complications so they can focus in particular on patients with a high risk of readmission within 30 days of discharge. As a result, readmission rates have decreased by 5%, which signals an increase in the quality of care as well as a decrease in cost (Bresnick, 2013b).

Real-time analytics is the most cutting-edge option of the three discussed here, but it is also the most costly to deploy and requires the most training. It requires complete integration of all data, including registries, silos, hardware systems, and software, as well as internal technical support and technical maintenance. But while the input (financial and technical investment) is great, the output holds even greater possibility for reducing cost and increasing quality (Torres, 2009).

Recognizing the promise of real-time analytics, Hunterdon Healthcare System has created a hospital performance management system that includes real-time data. Pressure on executives to support up-to-date data came not only from physicians but also from managers, administrators, and financial advisers. Hunterdon executives realized that the overwhelming amount of mismanaged data was draining their resources and energy (Mamary, 2012).

Consequently, they chose to channel the data through a system of real-time analytics that will ultimately transform treatment methods, as it highlights information that may be missed during retrospective review. As a result, Hunterdon has experienced improved outcomes.

RECOMMENDATIONS

After exploring three approaches to data analytics—small data, predictive modeling, and real-time analytics—I recommend that healthcare organizations examine all three solutions to determine which suits their particular needs. Each

offers a different way to manage the overwhelming amount of healthcare data and provide actionable information. By examining their current technological infrastructure and determining the investment they are willing to make, organizations can gauge what type of data analytics system will perform best for them (Prewitt, 2012).

Predictive modeling works best for large insurance companies and third-party payers. Third-party payers have long performed data analysis as a routine part of their business and continually seek new, advanced methods of data analytics. It is a good fit for insurers because the actionable data it derives allow them to assess risk pools, predict future trends, and determine reimbursement rates with some accuracy (Mace, 2012).

For practices, hospitals, and healthcare organizations, small data and real-time analytics hold the most promise. Small data uses micro-level data, which are already collected by EHRs. Small-data systems provide actionable information for a practice or an organization (Gooch, 2013) because they are easy to integrate into technical systems and offer management and predictive information in dashboard form that is digestible for small to midsize healthcare organizations. The actionable information is then used to drive improvements in the quality of care and decreases in costs (Kibbe & Kuraitis, 2012).

This improvement cycle is demonstrated by a partnership between Community Care of North Carolina (CCNC), a private–public medical home, and GlaxoSmithKline, a pharmaceutical company. The collaboration resulted in a small data analytics model that takes small amounts of data, such as patient-specific medical details; analyzes the data; and predicts outcomes. Instead of simply notifying CCNC that a problem exists, the model explains what the problem is and offers suggestions on how to fix the issue. This partnership-based small data model is delivering high-quality outcomes, with one CCNC executive noting that it has had a significant impact on the organization's overall efficiency and coordination (Gooch, 2013).

Real-time analytics also offers great possibilities for hospitals, practices, and healthcare organizations. Especially in inpatient settings, the status of a patient can change instantly. Real-time analytics provides physicians with continually updated information that allows for more effective and timely care management and proactive treatment methods. Eliminating the delay for analysis of data, real-time analytics reduces treatment time in inpatient and outpatient settings, offers potential outcomes for consideration, and reduces costs (Bresnick, 2013a).

CONCLUSION

Healthcare data will continue to accumulate rapidly. If practices, hospitals, and healthcare systems do not actively respond to the flood of unstructured data, they risk forgoing the opportunity to use these data in managing their operations (Burns, 2013). Small data and real-time analytics are two methods of data analytics that allow practices, hospitals, and healthcare organizations to extract meaningful information.

Predictive modeling is best suited for organizations managing large patient populations.

With all three methods, the applicable information mined from raw data supports improvements in the quality of care and cost efficiency (Prewitt, 2012). Currently, opportunities for improvement often arise only in the wake of a problematic situation. The use of small data, real-time analytics, and predictive modeling will revolutionize the healthcare field by increasing those opportunities beyond reacting to emerging problems.

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Sustainable Competitive Advantage for Accountable Care Organizations

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EXECUTIVE SUMMARY

In the current period of health industry reform, accountable care organizations (ACOs) have emerged as a new model for the delivery of high-quality and cost-effective healthcare. However, few ACOs operate in direct competition with one another, and the accountable care business model has yet to present a means of continually developing new marginal value for patients and network partners. With value-based purchasing and patient consumerism strengthening as market forces, ACOs must build organizational sustainability and competitive advantage to meet the value demands set by customers and competitors.

This essay proposes a strategy, adapted from the disciplines of agile software development and Lean product development, through which ACOs can engage internal and external customers in the development of new products that will provide sustainability and competitive advantage to the organization by decreasing waste in development, promoting specialized knowledge, and closely targeting customer value.

For more information about the concepts in this essay, contact Mr. Macfarlane at macfarlane.a@gmail.com. Mr. Macfarlane is the first-place winner of the graduate division of the 2014 ACHE Richard J. Stull Student Essay Competition in Healthcare Management. For more information about this competition, contact Sheila T. Brown at (312) 424-9316.

ACCOUNTABLE CARE ORGANIZATIONS IN COMPETITION

Since 2011, the number of Centers for Medicare & Medicaid Services (CMS)–sponsored accountable care organizations (ACOs) has expanded from 23 pioneer organizations to more than 300 ACOs. The rapid growth of the ACO model has confirmed the early advantages of accountable care, among them that more than 40% of U.S. residents who live in primary care service areas are served by at least one ACO (Gandhi & Weil, 2012). Although ACOs have created a market space in which they are competitive with existing models of healthcare delivery and are beginning to demonstrate an ability to improve health outcomes and reduce cost, little discussion has been given to how ACOs will compete and coexist in the same market. If the explosive growth of ACOs continues, many organizations will be forced to share service areas with competitors and develop strategies for attaining competitive advantage.

However, tools and strategies have been developed in other industries that may help ACOs achieve sustainable competitive advantage. Using a framework of strategic "imaginations," ACOs can identify customers and market opportunities within a rapidly changing environment. By pursuing a product development strategy that reinforces operational and network sustainability through the identification of new customer value areas, an ACO can provide a diverse mix of low-cost, high-value products and features that will enable it to remain competitive with its peer organizations.

COMPETITIVE ADVANTAGE STRATEGIES

Strategic Imaginations

Generally, competitive advantage is the result of an organization's access to internal or external knowledge and resources. Organizations with better access to valued resources, or in possession of knowledge that allows them to make better decisions, hold an advantage over their competitors (Wang, Lin, & Chu, 2011). By definition, ACOs benefit from a competitive advantage relative to traditional models of care delivery: The ability to coordinate patient care across a continuum of services produces improved health outcomes for a lower cost of care. However, because this capability is a result of the ACO's organizational design, it does not provide a competitive advantage relative to other ACOs.

To create a competitive advantage, many ACOs have pursued a strategy of quality and cost leadership. Such strategies follow from the incentives created by CMS's pioneer ACO, Medicare Shared Savings, and Hospital Value-Based Purchasing programs, which reward the delivery of high-quality care by allowing ACO-affiliated providers to share net savings resulting from effective care management (CMS, 2012) Unfortunately, these approaches cannot effectively produce long-term strategic advantage for ACOs; because cost and quality standards are set by third-party payers, such as Medicare and Medicaid, any advantage gained in a specific market can be erased by shifts in minimum requirements for value-based purchasing. Thus, applying a cost and quality strategy to competitive ACOs is

detrimental to the market, as cost competition between ACOs will ultimately affect the ability to deliver safe, high-quality, and effective care.

Rather than attempting to translate the competitive strategies of legacy business models and fee-for-service reimbursement to the newly created market of competitive accountable care, ACOs should pursue unique strategies based on their own organizational structure and customer value configuration. Following the model proposed by Roos & Victor (2006), ACOs should adopt approaches derived from the "three imaginations"—description, creation, and challenge—unique to the organization.

The descriptive imagination creates an image of the external environment, including competitors, partners, and the regulatory landscape, identifying patterns in the environment and challenges to the organization. The creative imagination responds to the image derived from the descriptive imagination, creating solutions and suggesting value configurations. The challenge imagination evaluates the assumptions of the creative and descriptive imaginations by challenging hypotheses and organizational truths and promoting disruptive innovations (Roos & Victor, 2006).

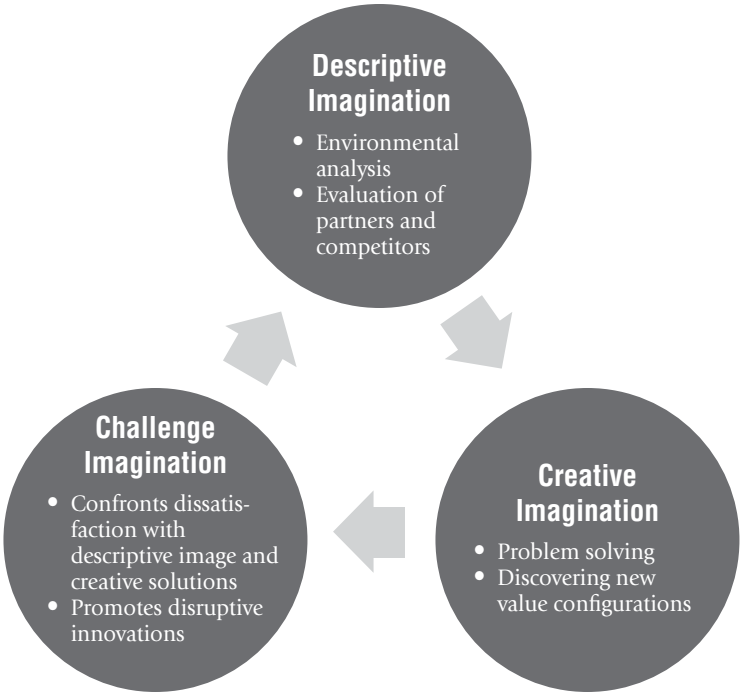
As applied by Siemens, this framework for strategy crafting has proven effective when market shifts threaten the organization's access to resources or customers (Gibbert, 2004). Applied to ACOs, the three imaginations allow competitive organizations to form hypotheses about market and value conditions that stem from organizational and customer intelligence rather than from generic market knowledge. The new, tacit knowledge resulting from this process (see Figure 1) provides the organization with an inimitable advantage over competitors.

Sustainability

Sustainable management strategy emerges when organizations engage in *biomimicry*, or the imitation of naturally sustainable cycles of growth, decay, and regeneration. For the healthcare organization, sustainable strategies must reduce waste resulting from the production, use, and disuse of goods and services (Senge & Carstedt, 2001). Sustainability for ACOs can be framed in terms of operational and network management, with the primary goal of reducing waste arising from operations and network attrition. Sustainable operations seek to reduce operational waste, or the net of an ACO's variable costs, which includes the net waste produced by discontinuities in patient care, variations in practice among providers, and rework resulting from inadequate communication. Sustainable network management, in contrast, focuses on reducing the fixed costs associated with assembling and maintaining the ACO's delivery network.

The operational and network hemispheres of ACO sustainability are critical codrivers of strategic advantage in the competitive accountable care environment. Improved operational sustainability reduces the ACO's exposure to variable costs, resulting in greater opportunity for shared savings among network partners and long-term stability within the network. Similarly, a

FIGURE 1
The Three Strategic Imaginations



Source. Roos & Victor (2006).

sustainable ACO network with few disruptions among providers and partners is able to engage in long-term organizational learning, developing new ways to produce value for internal and external customers (see Figure 2).

Product Development

If ACOs cannot create or sustain competitive advantage on the basis of classical market differentiation strategies, such as cost and quality leadership, they must create and sustain an advantageous position through the discovery of new value opportunities within the market. Defined broadly, product development is the process of identifying novel or improved products or services on the basis of the organization's hypotheses about consumer value configurations, market competition, and the value added by new products or services to the organization's business plan and strategy (Zuckerman, 2005).

When applied in emerging and highly competitive markets, however, these hypotheses are vulnerable to the effects of disruptive innovations, which rewrite customer expectations and value configurations. As a result, industries and markets in which the impact of disruption is strong, such as software development and technology start-ups, have created product development

strategies that address these shortcomings by leveraging customers as a resource to validate the hypotheses contained in a business or product plan.

The product development strategies adapted in highly disruptive industries closely follow the Lean management framework that evolved from the Toyota Production System, which identifies the voice of the customer as the ultimate determinant of value (Joint Commission Resources, 2006). The principles of Lean are also at the core of customer-driven strategies such as agile software development and, as the term implies, the Lean start-up model. These consumer-driven frameworks have produced the highly consumer-focused product development strategies of build–measure–learn and minimally viable products (MVPs). Applied to ACOs, these strategies act as drivers of operational and network sustainability, allowing the ACO to develop knowledge and resource-based tools of competitive advantage that are unique to the organization and its imaginations.

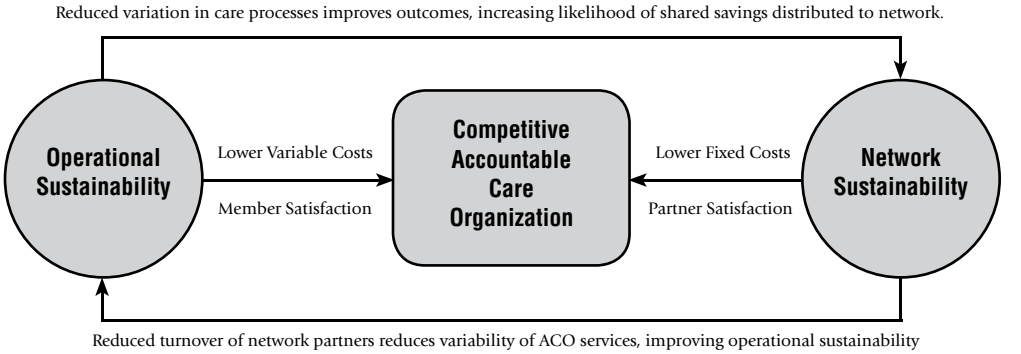
PROCESS IMPROVEMENT AND COMPETITIVE ADVANTAGE

Build–Measure–Learn Cycle

Most healthcare organizations are currently engaged in some form of process improvement based on the Plan–Do–Study–Act (PDSA) model. This model provides an iterative framework for engaging in validated learning about the effectiveness of current organizational processes (IHI, 2012). However, PDSA is insufficient for generating customer value or new products, because it does not validate the organizational hypotheses about customer value. To continuously create customer value, ACOs require a process that engages customers in evaluating business hypotheses, transforming them from the passive recipients of business strategies to cocreators of highly customized strategies.

An evolution from PDSA and a result of the impact of emergent and disruptive technologies in software development, the build–measure–learn

FIGURE 2
The Relationship Between Sustainability and Competitive Advantage



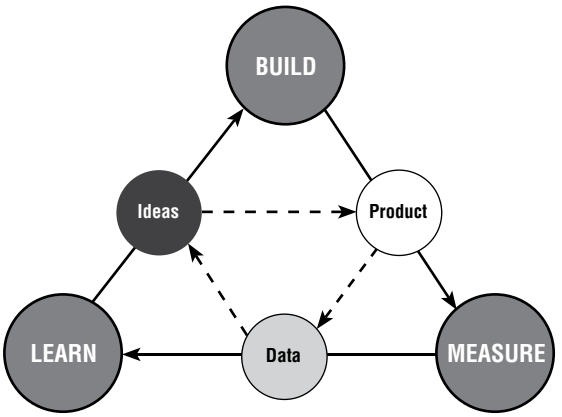
cycle (Figure 3) was developed by technology start-ups as a way to systematically engage customers in value cocreation. Build–measure–learn differs significantly from PDSA in that it addresses and validates (or invalidates) the underlying value hypothesis of the product in development ("Is this something the customer wants?") rather than identifying opportunities for improvement. As a result, non-value-added products and features are not developed, reducing the project costs of developing new products and allowing the organization to develop products that exactly suit its customer value configurations.

Applied to ACOs, build–measure–learn supports both operational and network sustainability. Customization inherent in the cycle reduces operational waste, preventing member attrition and improving satisfaction through high-quality business products. Engaging the ACO's internal customers in the development of ideas and products allows for the early identification of value misalignment between network partners, preventing the cost and disruption of partner turnover and providing an opportunity to develop consensus with mutually beneficial features and service configurations within the ACO. (Although internal customer codevelopment is also an important phase of idea and product development, it often is pursued at the expense of external customer codevelopment.)

Minimally Viable Products

One of the greatest challenges in developing a good, service, or business strategy is striking an appropriate balance of development costs and time and product sophistication. In response to these pressures, agile software developers conceptualized the MVP model. Unlike in traditional product development, the

FIGURE 3
The Build–Measure–Learn Cycle



Source. Reis (2011).

goal of MVP development is to produce the smallest bundle of features that creates value for the customer (Junk, 2000). As outlined in Table 1, MVPs do not include all the features that the organization believes its customers want. Rather, they are the smallest bundle of features that represent a value hypothesis that can be tested in a build–measure–learn cycle or similar customer-centered development process (Reis, 2011). Because MVPs target the organization's customers, the validation process results in unique and valuable tacit knowledge of customer value configurations (Lubit, 2001).

MVPs have the potential to significantly increase the speed at which the organization creates new business products and the net customer value of

TABLE 1
Comparison of Product Development Methods

	Traditional Product Development	Minimally Viable Product Development
Product development philosophy	Develop a product or service that maximizes market share and minimizes production costs (scalable)	Develop a feature that maximizes value to customer and organizational learning and minimizes waste in development
Development goal	Produce market-ready product	Test hypotheses about value to customer and business model
Structure and timing of development activities	Linear: New products developed at end of current product life cycle	Iterative: Features developed throughout product life cycle to add customer value
Key development partners	Engineers, marketers, product managers	Customers, analysts, accountants
Customer value engagement	Occurs at end of product development cycle; customers engage with finished products and provide input on product marketing (price, branding, etc.)	Occurs throughout development cycle; customers engage with MVPs (feature sets) and provide input on all aspects of product
Product features	Complete, final feature set to compete with similar products and services	Smallest feature set required to run build–measure–learn cycle
Production scalability	Designed for scalability into mass production	Not necessarily scalable into mass production

Sources. Reis (2011); Junk (2000); Campos, Norman, & Jadad (2011).

the organization's market offerings. Similar to the agile philosophy, MVPs are intended to deliver rapid incremental additions to customer value (Beck et al., 2001). Favoring speed over quality, individual MVPs have a low cost of development and relatively small impact on net customer value. However, through rapid iteration, MVPs provide organizations with validated intelligence about the direction of customer value. For example, Amazon.com recently demonstrated a delivery system using automated aerial drones (Rose, 2013). Despite lacking the regulatory guidelines, distribution infrastructure, and drone technology to deliver this innovation to its major markets, Amazon has successfully answered the underlying question of whether its customers are interested in new methods of package delivery. Rather than fully developing the service, Amazon created an MVP to validate assumptions about a customer value proposition.

Market Applications

The application of build–measure–learn and MVPs by ACOs promises to produce the knowledge and resources necessary to thrive in a competitive market by allowing them to develop offerings that are responsive to customer needs. For example, ACOs are challenged by the negative outlook shared by a majority of the millennial generation regarding the costs and quality of healthcare prompted by passage of the Affordable Care Act, which suggests an ambivalence toward new models of care delivery among this demographic (IOP, 2013). Lack of engagement among millennials, who consist of a generally low-utilization population, will directly threaten ACO sustainability, considering that their participation helps ACOs offset costs to treat high-utilization groups. Using MVPs and build–measure–learn, ACOs can test assumptions about these customers' opinions of value in particular and design sets of features that match the resulting value configuration. The ability of an ACO to differentiate in the local market by meeting the specific value configuration of its members and partners will allow the network to capture and retain members and partners, providing a competitive and sustainable advantage.

CONCLUSION

For ACOs to develop competitive advantage in the marketplace, they must have the ability to meet the value requirements of internal and external customers. As the ACO market becomes increasingly crowded, those organizations focused on delivering customer value will enjoy greater insulation than others from shifting cost and quality targets set by third-party payers. However, sustaining such an advantage demands that ACOs engage with customers in novel ways, such as having them participate as cocreators of unique and highly customized products. By focusing on the development of validated customer value hypotheses, ACOs substantially reduce the waste incurred in the production of noncompetitive products and services while gathering tacit knowledge about value configurations among internal and external customers. The accrual of savings in development costs and higher

satisfaction among external customers will in turn allow ACOs to operate stable networks of satisfied partners, reducing the organization's exposure to the costs of losing its network partners, including payers, provider groups, and acute care networks, and perpetuating a cycle of organizational sustainability that will drive long-term success.

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Hospital Characteristics Associated With Achievement of Meaningful Use

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EXECUTIVE SUMMARY

The objective of this study was to identify factors associated with hospitals that achieved the Medicare meaningful use incentive thresholds for payment under the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009. We employed a cross-sectional design using data from the 2011 American Hospital Association Annual Survey, including the Information Technology Supplement; the Centers for Medicare & Medicaid Services report of hospitals receiving meaningful use payments; and the Health Resources and Services Administration's Area Resource File. We used a lagged value from 2010 to determine electronic health record (EHR) adoption. Our methods were a descriptive analysis and logistic regression to examine how various hospital characteristics are associated with the achievement of Medicare meaningful use incentives.

Overall, 1,769 (38%) of 4,683 potentially eligible hospitals achieved meaningful use incentive thresholds by the end of 2012. Characteristics associated with organizations that received incentive payments were having an EHR in place in 2010, having a larger bed size, having a single health information technology vendor, obtaining Joint Commission accreditation, operating under for-profit status, having Medicare share of inpatient days in the middle two quartiles, being eligible for Medicaid incentives, and being located in the Middle Atlantic or South Atlantic census region. Characteristics associated with not receiving incentive payments were being a member of a hospital system and being located in the Mountain or Pacific census region.

Thus far, little evidence suggests that the HITECH incentive program has enticed hospitals without an EHR system to adopt meaningful use criteria. Policy makers should consider modifying the incentive program to accelerate the adoption of and meaningful use in hospitals without EHRs.

For more information about the concepts in this article, contact Dr. Diana at mdiana@tulane.edu.

INTRODUCTION

Despite the potential for interoperable electronic health records (EHRs) to positively affect healthcare delivery (Bates & Gawande, 2003; Kaushal, Shojania, & Bates, 2003; Kazley & Ozcan, 2008; Kazley & Diana, 2011), hospital adoption of the technology remains low, limiting the realization of these benefits (Jha et al., 2006; Ford, McAlearney, Phillips, Menachemi, & Rudolph, 2008; Jha et al., 2009; Jha, DesRoches, Kralovec, & Joshi, 2010). The Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 includes billions of dollars in incentives to promote the adoption and meaningful use (MU) of certified EHRs among eligible hospitals (Blumenthal & Tavenner, 2010; Office of the National Coordinator, 2010). The HITECH Act's primary initiative provides incentive payments through Medicare and Medicaid to move hospitals to EHR adoption and MU by helping them overcome financial barriers (Ash & Bates, 2005; Thakkar & Davis, 2006; Jha et al., 2009), but the ultimate goal is to achieve national improvements in quality and reductions in cost (Blumenthal & Tavenner, 2010).

In December 2012, the Centers for Medicare & Medicaid Services (CMS) completed the second year of incentive payments and released information on hospitals that successfully achieved MU. A 2010 survey found that 46% of hospitals expressed interest in participating in the program in 2011, the first opportunity to do so (Diana, Kazley, Ford, & Menachemi, 2012). However, a smaller percentage of hospitals actually achieved MU by the end of 2012 (CMS, 2012). It is important to understand the characteristics of hospitals that have successfully participated in the incentive program so that policy makers can get an early glimpse of how it is influencing EHR adoption and MU. Of particular interest is the extent to which previous EHR adoption is associated with achieving MU. Understanding this relationship will help determine if the program has merely rewarded hospitals that already had an EHR before the start of the program or encouraged hospitals to adopt a comprehensive EHR that meets the criteria for MU. Further, given that hospital incentive payments through Medicare are tied to Medicare caseload volume, it is important to determine if high-volume Medicare facilities are disproportionately represented among hospitals receiving payment as of 2012. Understanding these dynamics can help decision makers gauge the early impact of the HITECH Act's EHR incentive program and make any necessary corrections in the remaining years of the program.

The purpose of this article is threefold. First, we aim to characterize the hospitals that have achieved MU and identify differences between those that have and their counterparts. Second, we seek to determine how the 2010 EHR adoption level is related to achieving MU by 2012. Third, we discuss the implications that our findings might have for the overall success of the HITECH incentive program. We conducted the analysis using data from the 2011 American Hospital Association's (AHA) Annual Survey of Hospitals and its 2011 release of the Hospital EHR Adoption Database, the U.S.

Department of Health and Human Services Health Resources and Services Administration's Area Resource File, and the CMS report of hospitals receiving incentive payments as of December 2012 (CMS, 2012).

METHODS

We linked each data source using AHA and CMS identification numbers and restricted our analysis to hospitals potentially eligible to receive MU payments (i.e., nonfederal acute care hospitals in the 50 U.S. states). Data on hospital characteristics came from the AHA Annual Survey and included hospital size (measured as staffed beds), ownership (for-profit or not-for-profit), region of the country (by census division), teaching status (whether or not the organization is a member of the Council of Teaching Hospitals and Health Systems), system membership (part of a system or independent), and Joint Commission accreditation status. In addition, we obtained information from the AHA Annual Survey on (1) whether the hospital is eligible for Medicaid incentive payments (measured as having 10% or larger share of Medicaid discharges) and (2) the proportion of hospital inpatient days billed to Medicare (Medicare caseload). Last, we calculated market concentration at the hospital system level using the Herfindahl-Hirschman Index.

We calculated EHR adoption status in 2010 (prior to the start of the program) using the Annual Survey and EHR Adoption Database. We consider both data sources in our analyses because the latter source, as shown later, has a high nonresponse rate to this question. Using both data sources of EHR adoption serves as a sensitivity test to our analyses. Using the Annual Survey, we categorized EHR adoption into nonadopters, partial adopters, full adopters, and missing. We used the EHR Adoption Database to categorize EHR adoption into five categories: none, basic, basic with clinical notes, comprehensive, and missing (Jha et al., 2009). Moreover, given that previous research suggests the hospital health information technology (IT) management strategy (e.g., best of breed, single vendor) may influence MU attainment (Ford, Menachemi, Huerta, & Yu, 2010), we extracted a variable from the EHR Adoption Database that indicates whether the hospital has a single EHR vendor. Last, from the Area Resource File, we extracted measures of rural and urban location and census division.

We conducted a bivariate analysis of these characteristics using chi-square tests of independence to compare the frequencies of each characteristic between hospitals that did and did not receive Medicare MU incentive payments and hospitals that did and did not respond to the EHR Adoption Database survey. Next, we conducted two separate logistic regressions to assess the relationship between these hospital characteristics and the receipt of Medicare MU incentive payments. One regression model used the Annual Survey EHR variable, and the other used the EHR Adoption Database EHR variable. The dependent variable for both logistic regressions is whether the hospital received Medicare MU incentive payments as of December 2012. We report both odds ratios and marginal

effects (Greene, 2000) to assist with interpretation of the results.

RESULTS

The final sample consisted of 4,683 nonfederal acute care hospitals, with 1,769 (38%) of these having received Medicare MU incentive payments as of December 2012. Of the hospitals in our sample, 2,877 (61%) provided information on their EHR status in the Annual Survey and 2,959 (63%) provided information on their EHR status in the EHR Adoption Database.

Table 1 presents the characteristics of the 4,683 hospitals that did and did not receive Medicare MU incentive payments. Hospitals that received payments differed significantly on all characteristics except for-profit status and system membership. Hospitals receiving incentive payments were more likely to be urban, larger, Joint Commission–accredited teaching hospitals with a single health IT vendor that were full or comprehensive EHR adopters in 2010. Hospitals without an EHR in 2010 were significantly less likely to receive MU payments. Hospital Medicare share of inpatient days was positively associated with receiving MU payments for those hospitals in the upper third quartile. In bivariate analyses, hospitals located in the Mountain and Pacific census divisions were less likely to have received MU payments, and hospitals in the East North Central, New England, and South Atlantic census divisions were more likely to have received payments.

TABLE 1
Organizational Characteristics of Hospitals by MU Achievement (*N* = 4,683)

	Hospitals receiving MU payments (*N* = 1,769)	Potentially eligible hospitals that did not receive MU payments (*N* = 2,914)	*p*-Value
Location			
Rural	656 (34.7%)	1,233 (65.3%)	<.001
Urban	1,113 (39.8%)	1,681 (60.2%)	
Bed size			
1–125	844 (31.3%)	1,855 (68.7%)	<.001
126–399	689 (44.9%)	845 (55.1%)	
400+	236 (52.4%)	214 (47.6%)	
For-profit hospital			
No	1,433 (37.5%)	2,390 (62.5%)	.386
Yes	336 (39.1%)	524 (60.9%)	
Teaching hospital			
No	1,622 (36.8%)	2,786 (63.2%)	<.001
Yes	147 (53.5%)	128 (46.5%)	

Continued

TABLE 1 ***continued***

System hospital			
No	769 (37.8%)	1,266 (62.2%)	.986
Yes	1,000 (37.8%)	1,648 (62.2%)	
Joint Commission accredited			
No	475 (29.5%)	1,134 (70.5%)	<.001
Yes	1,294 (42.1%)	1,780 (57.9%)	
2010 EHR status[a]			
None	842 (36%)	1,497 (64%)	<.001
Basic	62 (53.5%)	54 (46.5%)	
Basic with notes	203 (51.4%)	192 (48.6%)	
Comprehensive	76 (69.7%)	33 (30.3%)	
Missing	586 (34%)	1,138 (66%)	
2010 EHR status[b]			
No	8 (34.8%)	15 (65.2%)	<.001
Partial	807 (39%)	1,261 (61%)	
Full	450 (57.3%)	336 (42.7%)	
Missing	504 (27.9%)	1,302 (72.1%)	
Medicaid eligible			
No	381 (32.7%)	786 (67.3%)	<.001
Yes	1,388 (39.5%)	2,128 (60.5%)	
Single vendor			
No	945 (32.8%)	1,938 (67.2%)	<.001
Yes	824 (45.8%)	976 (54.2%)	
Medicare share			
1st quartile	299 (35.6%)	591 (66.4%)	.01
2nd quartile	545 (39.2%)	845 (60.8%)	
3rd quartile	557 (41.1%)	799 (58.9%)	
4th quartile	368 (35.2%)	679 (64.8%)	
Census divisions			
East North Central	321 (45.2%)	389 (54.8%)	<.001
East South Central	143 (35.7%)	258 (64.3%)	
Middle Atlantic	217 (55.4%)	175 (44.6%)	
Mountain	69 (18.5%)	305 (81.5%)	
New England	76 (41.5%)	107 (58.5%)	
Pacific	65 (12.5%)	455 (87.5%)	
South Atlantic	352 (51.5%)	331 (48.5%)	
West North Central	264 (39.4%)	406 (60.6%)	
West South Central	262 (37.3%)	440 (62.7%)	

Source. Authors' analysis.

[a]Calculated using four categories developed by Jha et al. (2009). [b]Calculated directly from responses to the AHA Annual Survey of Hospitals.

Table 2 breaks down the characteristics of hospitals that did and did not respond to the AHA Annual Survey Information Technology Supplement. Overall, 2,959 (63%) hospitals responded to the supplement. Responders differed from nonresponders on all characteristics except for location, Joint Commission accreditation, and Medicaid incentive eligibility. Responders were more likely to be larger, not-for-profit, teaching, system-member hospitals; be EHR adopters of any level in 2010; and have a single health IT vendor. Hospital Medicare share of inpatient days was also positively associated with responding. In bivariate analyses, hospitals in the East North Central, Middle Atlantic, New England, South Atlantic, and West North Central census divisions were more likely to have responded.

Table 3 shows the results from the two logistic regressions. The first regression included the EHR status reported in the EHR Adoption Database using four categories of adoption. After controlling for all variables in the model, hospitals that had an EHR of any status (i.e., basic, basic with notes, or comprehensive) in 2010 were significantly more likely to have received an MU payment than those that had no EHR.

This effect was greatest for those hospitals that had a comprehensive EHR in 2010 (*OR* [odds ratio] = 3.71; marginal effect = +27.7; $p < .01$). In addition, hospitals with 126 to 399 beds (*OR* = 1.69; marginal effect = 11.1; $p < .01$) and those with 400+ beds (*OR* = 2.20; marginal effect = 16.9; $p < .01$) achieved MU at higher rates than their smaller hospital counterparts. For-profit hospitals (*OR* = 1.56; marginal effect = 7.4; $p < .01$), Joint Commission–accredited hospitals (*OR* = 1.38; marginal effect = 6.6; $p < .01$), those with a single EHR vendor (*OR* = 1.77; marginal effect = 11.8; $p < .01$), and those eligible for Medicaid incentives (*OR* = 1.24; marginal effect = 4.4, $p < .01$) were more likely than their counterparts to receive Medicare MU incentive payments.

TABLE 2
Organizational Characteristics of AHA EHR Supplement Responders and Nonresponders (*N* = 4,683)

	Hospitals not responding to the EHR Supplement (*N* = 1,724)	Hospitals responding to the EHR Supplement (*N* = 2,959)	*p*-Value
Location			
Rural	685 (36.3%)	1,204 (63.7%)	.52
Urban	1,039 (37.2%)	1,755 (62.8%)	
Bed size			
1–125	1,100 (40.8%)	1,599 (59.2%)	<.001
126–399	522 (34%)	1,012 (66%)	
400+	102 (22.7%)	348 (77.3%)	

Continued

TABLE 2 ***continued***

For-profit hospital			
No	1,230 (32.2%)	2,593 (67.8%)	<.001
Yes	494 (57.4%)	366 (42.6%)	
Teaching hospital			
No	1,672 (37.9%)	2,736 (62.1%)	<.001
Yes	52 (18.9%)	223 (81.1%)	
System hospital			
No	670 (32.9%)	1,365 (67.1%)	<.001
Yes	1,054 (39.8%)	1,594 (60.2%)	
Joint Commission accredited			
No	597 (37.1%)	1,012 (62.9%)	.766
Yes	1,127 (36.7%)	1,947 (63.3%)	
2010 EHR status[a]			
No	0 (0%)	23 (100%)	<.001
Partial	565 (27.3%)	1,503 (72.7%)	
Full	201 (25.6%)	585 (74.4%)	
Missing	958 (53.1%)	848 (46.9%)	
Medicaid eligible			
No	442 (37.9%)	725 (62.1%)	.386
Yes	1,282 (36.5%)	2,234 (63.5%)	
Single vendor			
No	1,724 (59.8%)	1,159 (40.2%)	<.001
Yes	0 (0%)	1,800 (100%)	
Medicare share			
1st quartile	293 (32.9%)	597 (67.1%)	<.001
2nd quartile	566 (40.7%)	824 (59.3%)	
3rd quartile	466 (34.4%)	890 (65.6%)	
4th quartile	399 (38.1%)	648 (61.9%)	
Census divisions			
East North Central	216 (30.4%)	494 (69.6%)	<.001
East South Central	195 (48.6%)	206 (51.4%)	
Middle Atlantic	109 (27.8%)	283 (72.2%)	
Mountain	170 (45.5%)	204 (54.5%)	
New England	39 (21.3%)	144 (78.7%)	
Pacific	241 (46.4%)	279 (53.6%)	
South Atlantic	274 (40.1%)	409 (59.9%)	
West North Central	140 (20.9%)	530 (79.1%)	
West South Central	303 (43.2%)	399 (56.9%)	

Source. Authors' analysis.

[a]Calculated directly from responses to the AHA Annual Survey of Hospitals.

TABLE 3

Relationship Between Hospital Characteristics and Receipt of Medicare EHR Incentive Payments

Hospital characteristics	Unadjusted % of hospitals receiving MU payments (*N* = 4,683)	Receiving MU payments with AHA IT Supplement EHR status (*N* = 4,635)		Receiving MU payments with AHA EHR status (*N* = 4,635)	
		OR (95% CI)	Marginal effect	*OR* (95% CI)	Marginal effect
2010 EHR status[a]					
None	36.0	1.00			
Basic	53.5	1.68 (1.13, 2.49)***	10.7		
Basic with notes	51.4	1.83 (1.45, 2.32)***	12.6		
Comprehensive	69.7	3.71 (2.37, 5.82)***	27.7		
Missing	34.0	1.53 (1.29, 1.83)***	8.8		
2010 EHR status[b]					
No	34.8			1.00	
Partial	39			1.17 (0.48, 2.86)	3.3
Full	57.3			2.44 (0.99, 6.00)*	19.3
Missing	27.9			0.85 (0.35, 2.08)	−3.2
Bed size					
1–125	31.3	1.00		1.00	
126–399	44.9	1.69 (1.43, 2.01)***	11.1	1.49 (1.26, 1.77)***	8.4
400+	52.4	2.20 (1.65, 2.93)***	16.9	1.79 (1.34, 2.39)***	12.3
Medicare share					
1st quartile	35.6	1.00		1.00	
2nd quartile	39.2	1.23 (1.01, 1.50)**	4.2	1.29 (1.06, 1.57)**	5.2
3rd quartile	41.1	1.28 (1.05, 1.56)**	5.1	1.22 (1.00, 1.49)**	4.1
4th quartile	35.2	1.10 (0.89, 1.36)	2.0	1.03 (0.83, 1.28)	0.6
For-profit tax status	39.1	1.56 (1.30, 1.87)***	9.2	1.86 (1.54, 2.25)***	12.7
Urban location	39.8	0.90 (0.76, 1.01)	−2.1	0.89 (0.73, 1.04)	−2.9
Competition (HHI)	—	1.24 (0.96, 1.61)	4.5	1.16 (0.89, 1.51)	3.0
Teaching hospital	53.5	1.01 (0.73, 1.38)	0.1	1.01 (0.74, 1.39)	0.3
System member	37.8	0.77 (0.67, 0.88)***	−5.5	0.73 (0.63, 0.84)***	−6.5
Medicaid incentive eligible	39.5	1.24 (1.05, 1.46)***	4.4	1.25 (1.06, 1.47)***	4.5
Joint Commission accredited	42.1	1.38 (1.17, 1.62)***	6.6	1.30 (1.10, 1.53)***	5.3
Single health IT vendor	45.8	1.77 (1.50, 2.10)***	11.8	1.43 (1.25, 1.64)***	7.3

Continued

TABLE 3 ***continued***

Census division					
New England	41.5	1.00		1.00	
Middle Atlantic	55.4	1.65 (1.14, 2.40)***	11.6	1.81 (1.24, 2.63)***	13.5
East North Central	45.2	1.27 (0.90, 1.80)	5.4	1.27 (0.90, 1.80)	5.4
West North Central	39.4	1.27 (0.88, 1.82)	5.4	1.22 (0.85, 1.76)	4.5
South Atlantic	51.5	1.37 (0.96, 1.95)*	7.1	1.48 (1.03, 2.12)**	8.8
East South Central	35.7	0.80 (0.55, 1.18)	−4.8	0.92 (0.62, 1.35)	−1.9
West South Central	37.3	1.01 (0.71, 1.44)	0.2	0.97 (0.68, 1.39)	−0.6
Mountain	18.5	0.35 (0.23, 0.54)***	−19.7	0.38 (0.25, 0.58)***	−18.2
Pacific	12.5	0.20 (0.13, 0.30)***	−26.9	0.22 (0.15, 0.34)***	−25.3

Source. Authors' analysis.

Note. HHI = Herfindahl-Hirschman Index.

[a]Calculated using four categories developed by Jha et al. (2009). [b]Calculated directly from responses to the AHA Annual Survey of Hospitals.

*$p < .10$. **$p < .05$. ***$p < .01$.

On the other hand, hospitals that were part of a system (*OR* = 0.77; marginal effect = −5.5; $p < .01$) and those located in the Mountain (*OR* = 0.35; marginal effect = −19.7; $p < .01$) and Pacific (*OR* = 0.20; marginal effect = −26.9; $p < .01$) regions were significantly less likely to have received Medicare MU incentive payments relative to hospitals in the New England region. Hospitals in the Middle Atlantic (*OR* = 1.65; marginal effect = 11.6; $p < .01$) and South Atlantic (*OR* = 1.37; marginal effect = 7.1; $p < .10$) regions were significantly more likely to have received Medicare MU incentive payments relative to hospitals in the New England region. Finally, hospitals with a Medicare share in the second (*OR* = 1.23; marginal effect = 4.2; $p < .05$) and third (*OR* = 1.28; marginal effect = 5.1; $p < .05$) quartiles were associated with a significantly higher likelihood of achieving MU relative to hospitals in the first quartile.

The second logistic regression used the Annual Survey of Hospitals EHR variable instead of the EHR variable developed from the EHR Adoption Database. We conducted this regression as a sensitivity analysis because of the level of nonresponse to the EHR Adoption Database survey. The results are similar, with full EHR adoption significantly related to the receipt of Medicare MU incentive payments (*OR* = 2.44; marginal effect = 19.3; $p < .10$). Hospitals with 126 to 399 beds (*OR* = 1.49; marginal effect = 8.4; $p < .01$) and those with 400+ beds (*OR* = 1.79; marginal effect = 12.3; $p < .01$) achieved MU at higher rates than their smaller hospital counterparts. For-profit hospitals (*OR* = 1.86; marginal effect = 12.7; $p < .01$), Joint Commission–accredited hospitals (*OR* = 1.30; marginal effect = 5.3; $p <$

.01), those with a single EHR vendor (*OR* = 1.43; marginal effect = 7.3; $p < .01$), and those eligible for Medicaid incentives (*OR* = 1.25; marginal effect = 4.5, $p < .01$) were more likely than their counterparts to receive Medicare MU incentive payments.

On the other hand, hospitals that were part of a system (*OR* = 0.73; marginal effect = −6.5; $p < .01$) and those located in the Mountain (*OR* = 0.38; marginal effect = −18.2; $p < .01$) and Pacific (*OR* = 0.22; marginal effect = −25.3; $p < .01$) regions were significantly less likely to have received Medicare MU incentive payments relative to hospitals in the New England region. Hospitals in the Middle Atlantic (*OR* = 1.81; marginal effect = 13.5; $p < .01$) and South Atlantic (*OR* = 1.48; marginal effect = 8.8; $p < 0.05$) regions were significantly more likely to have received Medicare MU incentive payments relative to hospitals in the New England region.

DISCUSSION

The main finding from our analysis is that adoption of an EHR system prior to the start of the incentive program was the strongest predictor of achieving MU among the approximately 38% of eligible hospitals that had achieved MU as of December 2012. Thus, the EHR incentive program seems to have disproportionately rewarded hospitals that had already been engaging in the desired behavior. At this early stage of the MU program, this finding raises the concern that the EHR incentive program may not rapidly achieve the intended goal of widespread EHR MU, which, because of low national EHR adoption rates, must be driven by new EHR implementations (Jha et al., 2009; Blumenthal, 2010).

Additionally, although more than two thirds of hospitals with a comprehensive EHR in 2010 earned an MU payment through 2012 and the definition of *comprehensive EHR* was aligned to the EHR MU criteria, 30% of organizations with the IT infrastructure in place to meet the MU criteria failed to attest to their eligibility for Medicare incentive payments. Although our analysis cannot determine why the facilities with advanced EHR systems did not participate in the MU program, previous research has found that hospitals that failed to achieve MU in 2011 were more likely to report challenges with meeting the computerized provider order entry (CPOE) MU objective (Harle, Huerta, Ford, Diana, & Menachemi, 2012). These issues may stem from the social, organizational, and technological challenges of implementing CPOE that can lead to implementation failures and lack of consistent use by physicians. Further, assuming that hospital management performs marginal analyses before adopting new technology, we would expect the MU incentives to increase marginal revenue for those hospitals closest to achieving comprehensive EHR status and MU. It may be that additional time is needed before EHR adoption can be accelerated in response to the HITECH Act incentives.

On the other hand, the goals of reducing Medicare costs by providing greater incentives to high-volume Medicare hospitals may be having the desired impact. We found evidence that, after controlling for other factors, an increase in Medicare share was

positively associated with achieving MU. If the financial and quality benefits of widespread EHR adoption are eventually realized, Medicare may see a disproportionately high percentage of these returns, thereby justifying the policy.

Other hospital characteristics were associated with achieving MU, including the fact that for-profit hospitals achieved higher rates of MU than their counterparts. To the extent that for-profit hospitals scrutinize major decisions for their returns on investment, the MU payments may have been seen as a unique opportunity to pursue an EHR. Alternatively, for-profit hospitals may be more efficient in pursuing opportunities that maximize reimbursement. Our findings also indicate that hospitals with greater resources, including larger or accredited facilities, were more likely to have received incentive payments. This result may reflect the ability of hospitals with more resources to leverage both the financial and nonfinancial resources needed to achieve MU.

System membership was negatively associated with receiving MU payments, which seems contrary to the argument that resource availability increases the likelihood of achieving MU. This finding suggests either that system hospitals were less nimble in reacting to the opportunity or that they made a strategic choice to "wait and see." In addition, because of their centralized governance structure, some system-affiliated hospitals may have a tendency to take longer to act on major initiatives. Future research should examine what, if any, barriers to achieving MU were unique to system-affiliated hospitals.

Beyond these hospital characteristics, we found that hospital health information management strategies were associated with receiving MU payments. Hospitals pursuing an enterprise resource planning approach that uses a single vendor for all applications may have had an advantage in achieving MU. This advantage may stem from the lack of need to integrate cross-platform information systems, which may be costly and time consuming for hospitals managing products from multiple vendors. We expect this trend to become less pronounced in subsequent years as more hospitals with different health IT management strategies achieve MU. However, to the extent that these management strategies are related to other hospital characteristics, such as size or financial performance, more persistent differences may exist between hospitals with the resources to implement an enterprise-wide approach to managing their health information systems portfolio and those without such resources. This finding may also indicate that efforts to integrate different systems within organizations are not sufficiently successful to allow MU achievement.

Finally, we found a significant regional effect related to achieving MU. Hospitals outside of the New England and Middle Atlantic regions were generally less likely to have received incentive payments. Hospitals in the Mountain and Pacific divisions were particularly far behind. This trend may reflect the historical commitment to EHR among hospital leaders in the New England region (Chaudhry et al., 2006).

Our study has some notable limitations. First, we employed a

cross-sectional design, which limits us to examining associations rather than causation. Second, we could not match all hospitals appearing on the CMS list of MU achievers to AHA data used in our analysis (we matched 1,769 of 2,123 hospitals on the CMS list). Third, our study focuses on the first two years of the incentive program and therefore does not offer conclusive evidence regarding the ultimate impact of the HITECH Act. Nevertheless, our data provide an early glimpse of what factors may be influencing MU achievement, thereby allowing for action by CMS to ensure the success of the program in the remaining years.

CONCLUSION

Without changes in the trends we identified, the policy goal of promoting EHR adoption and MU may not be fully realized in the near future. Our findings provide some guidance for policy makers on what adjustments to make to the MU program before the Stage 2 MU requirements are implemented. For example, policy makers could modify the incentive payments based on how far hospitals are from achieving MU, so that those that have not adopted an EHR could potentially receive higher incentives than those that already have an EHR or have begun EHR adoption. They could also focus on hospitals in the Mountain and Pacific regions of the country, perhaps considering level of incentive in conjunction with their EHR status. Smaller hospitals could receive higher incentive payments to further motivate EHR adoption and provide additional financial resources to do so. In addition to these strategies, which provide targeted financial incentives, policy makers could increase regional extension centers' focus on hospitals to help nonadopting hospitals overcome organizational, cultural, technological, and other nonfinancial barriers to achieving MU. We recognize that the political challenges of implementing some of these recommendations may be significant. For example, explicit favoring of late adopters would seem to penalize early adopters by reducing the return on their technology investments, as would providing greater incentives to hospitals in certain regions of the country. However, such strategies may be necessary to avoid the continuation of historically persistent differences among smaller rural hospitals and their larger urban counterparts into the arena of meaningful use of health information technologies.

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PRACTITIONER APPLICATION

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Over the past several years, many of our industry's thought leaders have stumped the halls and offices of federal and state lawmakers to bring attention to the need for increased information technology (IT) adoption. I believe meaningful use (MU) requirements to be an outcome of those efforts, even though many continue to debate the program's overall net cost and value, fairness, timing, and ultimate purpose. As of this writing, the program is well into its Stage 2 attestation period, with the Centers for Medicare & Medicaid Services (CMS) continuing to offer financial incentives to those that comply and planning to impose reimbursement penalties for those that do not. Most observers acknowledge that compliance with the program equips providers with an array of IT capabilities that can drive a meaningful and measurable improvement in the quality, efficiency, and convenience of healthcare delivery. However, Stage 2 compliance (compared to Stage 1) is proving to be a significant challenge. The possibility of missing just one of several demanding criteria has many providers on edge.

Over the past two decades, the procurement of IT in healthcare has increased dramatically. And although the automation of financial reporting, billing, and other corporate functions have historically received the majority of investment, in recent years, electronic health records and other solutions, such as decision support, patient/physician portals, and information exchange technologies, have become important priorities. Yet healthcare overall still lags other industries in the value-driven use of IT. Much to the frustration and disappointment of many, this lag has impeded realization of the efficiencies, quality-of-care enhancements, and decision-making improvements enabled by automation while also preventing critical-mass exchange and portability of patient information. However, parallel to MU, reimbursement reform and the pursuit of the Institute for Healthcare Improvement's Triple Aim have introduced new pressures for improved outcomes at reduced cost, driving providers to new levels of IT adoption.

In and of itself, the MU program should probably not be considered *the* sustainable catalyst for increased healthcare IT adoption, but rather one very important aspect of an overall industry transformation. To its credit, the program has proven for some providers to be effective in jump-starting their IT journey. And, as of April 2014, CMS reports that 90% of eligible hospitals (including critical access facilities) have received some level of incentive payment totaling more than $14 billion. Yet for some, the program (Stage 2 in particular) remains an investment versus return decision, compelling them to incur penalties in the short term rather than enduring the cost and overall impact of compliance within the government's time frame. Expanded incentives might help, but the cost of IT and the effort to implement and

maintain a growing base of technology remain barriers for this contingent of providers.

As an experienced chief information officer, I believe those providers that have already implemented and supported electronic health records and related clinical/administrative systems are at a significant advantage in the pursuit of MU compliance as well as being positioned to thrive in the future. I further believe that all providers will eventually make the necessary IT investments or else suffer consequences more severe than in years past.

The Effect of Professional Culture on Intrinsic Motivation Among Physicians in an Academic Medical Center

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EXECUTIVE SUMMARY

Today, most healthcare organizations aim to manage professionals' motivation through monetary incentives, such as pay for performance. However, addressing motivation extrinsically can involve negative effects, such as disturbed teamwork, gaming the system, and crowd-out of intrinsic motivation. To offset these side effects, it is crucial to support professionals' intrinsic motivation actively, which is largely determined by enjoyment- and obligation-based social norms that derive from professionals' culture.

For this study, a professional culture questionnaire was designed and validated, the results of which uncovered three factors: relationship to work, relationship to colleagues, and relationship to organization. These factors served as independent variables for regression analyses. Second, Amabile's validated work preference inventory was used to measure intrinsic motivation as a dependent variable. The regression analysis was controlled for sex, age, and experience.

The study revealed that relationship to work had the strongest (and a positive) impact on intrinsic motivation in general and on Amabile's intrinsic subscales, enjoyment and challenge. Relationship to organization had a negative impact on intrinsic motivation and both subscales, and relationship to colleagues showed a low positive significance for the intrinsic scale only.

Healthcare organizations have mostly focused on targeting professionals' extrinsic motivation. However, managing dimensions of professional culture can help support professionals' intrinsic motivation without incurring the side effects of monetary incentives.

For more information about the concepts in this article, contact Dr. Janus at katharina@katharinajanus.com.

INTRODUCTION

Today, most healthcare organizations aim to manage professionals' motivation through monetary incentives, such as pay for performance (P4P). However, extrinsic motivation can involve negative effects, such as teamwork becoming disturbed (Lazear & Shaw, 2007), professionals gaming the system (Doran et al., 2006), and intrinsic motivation being crowded out (Frey, 1997). To mitigate the impact of these side effects, it is crucial to actively support professionals' intrinsic motivation (Amabile, 1993; Csikszentmihalyi, 1975, 1978; Deci & Ryan, 2000), which is largely influenced by the enjoyment- and obligation-based social norms derived from professionals' culture (Wynia, 2008).

Professional culture defines not only tasks and social norms but the entire work environment and process of sense-making, or how things are done. The defining impact of professional culture has significant effects on how organizational incentive systems are perceived by particular sets of professionals and whether they enhance or decrease professionals' motivation (Antal, Dierkes, & Helmers, 1993; McGregor, 1960).

The objectives of the study were to respond to the first three questions that follow and draw conclusions for practice in terms of questions 4 and 5:

1. Which factors are the main dimensions of professional culture?
2. What is the impact of these factors on the overall scale of intrinsic motivation and the subscales enjoyment (interest in the work itself) and challenge (achieving professional status and recognition)?
3. Which elements of professional culture have the largest impact on intrinsic motivation?
4. How can healthcare leaders actively manage professionals' motivation through their professional culture?
5. How can healthcare organizations benefit from these effects when designing their incentive systems?

As a study sample, I chose physicians working at a large German academic medical center because they have been the focus of organizational and political "incentivization" initiatives in healthcare.

ELEMENTS OF INTRINSIC MOTIVATION

Motivation is intrinsic if an activity is undertaken for the immediate satisfaction of one's needs (Deci, 1975). Intrinsic motivation is valued for its own sake and appears to be self-sustained (Calder & Staw, 1975; de Charmes, 1968; Deci, 1975; Deci & Ryan, 1985; Frey, 1997). It is fostered by commitment to work that is both satisfactory and fulfilling (Osterloh, Frost, & Frey, 2002).

Lindenberg (2001) differentiates between two types of intrinsic motivation. The first type is *enjoyment-based intrinsic motivation*, which has been the focus of studies by Deci, Koestner, and Ryan (1999a, 1999b). People who experience enjoyment-based intrinsic motivation derive pleasure from the activity itself and often report a "flow experience" (Csikszentmihalyi, 1975)

that makes them lose track of time. Examples in medicine are healing, interacting with patients, and performing surgery.

The second type, *obligation-/challenge-based intrinsic motivation*, was introduced by Frey (1997) and describes the adherence to professional and social norms in order to achieve professional recognition and status (March, 1999). Individuals feel better when they observe group norms, such as ethical standards, professional codes of practice, or norms of procedural fairness (Cropanzano & Folger, 1996; Fehr & Gächter, 2000; Tyler, 1994; Tyler & Blader, 2000), and have a sense of personal or group identity (Akerlof & Kranton, 2000). People who experience obligation- or challenge-based intrinsic motivation are prepared to follow the norms, even if those norms limit their self-interests—as long as these individuals accept the legitimacy of the norms, which can be an organization or a profession that frequently corresponds closely with its members' value systems (Schein, 1990).

Despite the benefits described, the challenge is that changes in intrinsic motivation are more difficult to measure and that the outcome is more uncertain than relying on extrinsic motivation to manage behavior. For this reason, economists—and managers—traditionally prefer a reward-and-command policy (Argyris, 1998) that is based on extrinsic incentives. However, under certain conditions, such as when the professionals being incentivized perceive they are under unwanted control, paying professionals for performance can not only fail to improve their performance but even produce unwanted side effects, or so-called crowding-out effects (Frey, 1997), and may then reduce any intrinsic motivation that is based on the pure interest in the work or the obligation toward the profession.

Therefore, this article aims to shed light on the drivers of intrinsic motivation and how to manage them. I review the literature and discuss factors that affect intrinsic motivation among professionals based on the assumption that identification and social norms are the primary attributes of intrinsic motivation.

THE IMPACT OF CULTURE ON INTRINSIC MOTIVATION

Culture is a key variable in understanding the ways of thinking and the motivations of individuals and groups in different social settings (Schein, 1980, 1985). Although Bloor and Dawson (1993) observed the existence of different professional groups in healthcare organizations and Scott, Mannion, Davies, and Marshall (2003, p. 22) concluded that "professional identity and orientation may be one key to unlock the culture of health care organizations," few empirical studies exist in the field of professionalism and culture in medicine.

Cultural characteristics are commonly expressed as patterns of basic *norms, attitudes,* and *assumptions* (Schein, 1985; Triandis, 1996; van Maanen & Barley, 1984) that are relevant for all individuals of a social unit (Katz & Kahn, 1978; Likert, 1967; McGregor, 1960). In its broadest sense, *culture* is defined as the "collective programming

of the mind which separates members of one group or category from another" (Hofstede, Hofstede, & Minkov, 2010, p. 9). The framework for intrinsic motivation can be defined by both organizational culture and professional culture.

Similar to an organization, a profession is a community that shares values (Weiner, 1988), attitudes (Helmreich & Merritt, 1998), norms, assumptions (Schein, 1985; Triandis, 1996), perspectives (van Maanen & Barley, 1984), and social ideals and beliefs among its members. Professionals subscribe to a common code of ethics, are highly specialized knowledge workers (Drucker, 1999), and enjoy a high status and degree of autonomy and variety in (mainly analytic) tasks (Alvesson, 2004; Luhrmann, 2000; Millerson, 1973; Vollmer & Mills, 1966). Thus, professional identity develops (Scott et al., 2003) and preserves autonomy in regulating and administrating affairs (Freidson, 1970) based on an expert status (Brint, 1994). This socially trusted community then becomes a way of life (Swick, 2000).

Because both concepts (organizational and professional cultures) seem to have an influence on intrinsic motivation, the question is raised as to which concept is the more plausible to pursue by healthcare leaders to manage intrinsic motivation. A promising approach to understanding the determinants that shape the tacit assumptions and underlying norms of organizations and professions simultaneously is the consideration of a professional culture that overlaps with organizational culture. Although the presence of overlapping cultures is well documented (Bloor & Dawson, 1993; Hofstede, 1998; Martin & Siehl, 1983; Trice, 1993), neither the impact of professional culture nor that of organizational culture on intrinsic motivation of professionals has been examined in detail.

Importantly, studies have shown that, because of a lack of focus on human factors, organizations will never be able to perfectly implement the underlying assumptions and norms of individual employees' cultural patterns (Wilkins & Ouchi, 1983). In fact, if their professional norms, values, and beliefs are not met within an organization, professionals search for an organization that is more adaptive to those factors (van Maanen & Schein, 1979) or develop a counterculture in the current organization (Cooke & Rousseau, 1988). Therefore, it can be concluded that higher degrees of identification and congruence with professional norms could be observed by way of the shared values of professional rather than organizational culture and that professional culture even determines, at least in part, the values embedded in organizational culture (Bloor & Dawson, 1993; van Maanen & Barley, 1984).

This conclusion is of particular importance, as studies have shown that professional culture frequently overrides organizational culture if a profession has exclusive knowledge for the solution of a problem, such as treating a disease (Abbott, 1988). Therefore, a deeper understanding of the dimensions of professional culture is required to assess the effects of physicians' professional culture on intrinsic motivation.

METHODOLOGY

Overview

First, to shed light on the impact of professional culture on professionals' motivation, the dimensions of professional culture are analyzed. Then, these factors' impact on intrinsic motivation is determined using Amabile's (1995) validated work preference inventory.

As a first step, a professional culture questionnaire (PC-Q) was designed, validated, and tested in four departments of a hospital. Using factor analysis, the original 33 items were reduced to 15. In the second step, the remaining 15 items were condensed into the three factors that showed the highest factor loadings, indicating the strength of their contribution to the respective factor. To measure professionals' motivation, the validated work preference inventory questionnaire (Amabile, 1993, 1995) was used, which measures intrinsic and extrinsic motivation as well as four subscales: enjoyment, challenge, compensation, and outward orientation. Because research suggests that professional culture influences mainly intrinsic motivation (as described earlier), I hypothesized that the three factors derived from the PC-Q would have an impact on intrinsic motivation and its two subscales, enjoyment and challenge. The regression analysis was controlled for sex, age, and length of work experience.

Selection of Physician Practice Setting

Academic medical centers are the institutions in which prospective physicians are first socialized and where physicians' attitudes and value systems regarding their work are established. In addition, academic medical centers play an important role in continuing medical education and are the most distinguished forum for the interaction of cross-professional teams in complex situations.

Although a few researchers have studied physician motivation in academic medical centers (Janus et al., 2008; Janus, Amelung, Gaitanides, & Schwartz, 2006; Janus & Brown, 2007), little research has been conducted on professional culture. Hence, one of the largest academic medical centers in Germany was chosen as my study site, and survey data were collected from a sample of physicians who were salaried employees and spent the majority of their work time providing patient care.

Instrument Development and Data Collection

A comprehensive literature search for scales that measure motivation (intrinsic/extrinsic) was performed. Only two scales fit with the research agenda and the study population: Blais's (1993) work motivation inventory and Amabile's (1993, 1995) work preference inventory. Because Amabile's work preference inventory includes validated scales of intrinsic and extrinsic motivation and related subscales and the language of the items was deemed suitable for knowledge workers, the work preference inventory was chosen over the work motivation inventory. The work preference inventory consists of 30 items, and respondents are asked to indicate whether the statement about their work is never or almost never true,

sometimes true, often true, or always or almost always true. Responses are then scored along two main scales (extrinsic and intrinsic motivation) and four subscales (enjoyment, challenge, compensation, and outward orientation).

Research on scales for the measurement of professional culture did not lead to any questionnaires that could be used in the physician practice setting. Therefore, the PC-Q was designed based on the theoretical constructs of professional culture that have been analyzed in the past (Alvesson, 2004; Luhrmann, 2000; Millerson, 1973; Vollmer & Mills, 1966). These constructs include the following:

- variety versus monotony in tasks,
- self-actualization versus status,
- self-directed versus directed by others,
- short term versus long term,
- individual orientation versus group orientation, and
- analytic versus applied approaches to solving problems.

The instrument contained 33 items, each of which was a characteristic of professional culture that previous research suggests might be associated with intrinsic motivation. Respondents were asked how important that characteristic was to them. The response option was a 5-point scale anchored at one end by "very important" and at the other end by "very unimportant."

Finally, a group of questions collected information on the respondents themselves: length of time working in the profession, field of medicine, age, and gender.

The questionnaire was pretested for validation purposes, put in online format using EvaSys version 4.1 (Electric Paper, 2010), and sent by e-mail to a random sample of physicians who had been selected from a hospital database of employed physicians. Data collection was terminated when validation scores (construct validity) were high and the resulting factors were confirmed in the analysis.

The validated PC-Q was then combined with Amabile's work preference inventory, and online surveys were distributed to a diverse sample of 449 physicians who had agreed to participate in a study and who were affiliated with the medical center selected for the study. Each questionnaire was coded to indicate the department of the respondent but was otherwise anonymous. No incentive was offered to physicians for completing the questionnaire. Follow-up reminder e-mails were sent to the departments as needed.

Analytic Methods

Frequency distributions were prepared to compare the study samples on a variety of characteristics, such as gender, age, field of medicine, and length of time working in the profession. For the specific items on professional culture data, explanatory factor analysis was used to group the 15 professional culture items into a small number of factors. Simultaneously, the scales of Amabile's work preference inventory were calculated. Then, I performed a multiple regression analysis using the intrinsic motivation scale and the subscales enjoyment and challenge as dependent variables, and I used the factors derived from the PC-Q as predictors. I controlled for age, length of

experience in the profession, and sex in each analysis.

RESULTS

Characteristics of the Study Population

The response rate to our study was 45% of the initially distributed 449 questionnaires. The completion rate of the individual items was 78%; 8% of these had missing values in the section on demographics but were complete otherwise. Of the respondents, 43.28% were female and 56.72% were male, which is consistent with the percentage of women and men working at academic medical centers in Germany. On average, respondents have been working in the profession for 9.88 years, ranging from 1 year to 35 years. The mean age of respondents was 37.13, with the youngest being 26 years old and the oldest 61 years. The majority of respondents indicated that they were specialists (78.38%); 21.62% identified themselves as general practitioners. The representation of respondents from different departments was relatively equal, as the following list shows:

- Anesthesia—9.45%
- Oral and maxillofacial surgery—10.45%
- Internal medicine (gastroenterology, endocrinology, nephrology, metabolism, nutrition science)—12.44%
- Cardiac surgery—8.96%
- Internal medicine (hematology, oncology, rheumatology, infectious diseases)—9.45%
- Trauma surgery—11.44%
- Ear–nose–throat—9.45%
- Psychiatry—10.45%
- Pediatrics—7.96%
- Other (dermatology, orthopedics, neurology, urology)—9.95%

Comparing demographics of respondents with demographics of the total survey population, my data represent sex and age distributions very well. On average, the percentage of females in my sample was slightly higher than in the total survey population (43.28% versus 41.93%) and the percentage of males was slightly lower (56.72% versus 58.07%). This difference was consistent across all departments except for pediatrics and internal medicine (oncology). Similarly, the age distribution was consistent across departments. No data were available on the length of tenure of the total survey population (confidential, nonaccessible data).

Dimensions of Professional Culture in Medicine

An explanatory factor analysis using principal component analysis with varimax rotation was performed on the 15 professional culture items to identify a small number of components of professional culture for physicians in academic medical centers. The analysis yielded three factors. Factor 1, relationship to work, had the highest Cronbach alpha (0.76), followed by Factor 2, relationship to the organization (0.68), and Factor 3, relationship to colleagues (0.61). Table 1 provides an overview of the factor loadings and the interpretation of factors. In general, it is assumed that a variable can be assigned to a factor if its loading is equal to or above 0.6 (Backhaus, Erichson, Plinke, & Weiber, 2000).

The three-factor solution captured 98.91% of the total variance in

TABLE 1
Factor Loadings From Principal-Component Analysis, Means, and Cronbach Alphas

Item	Relevant factor loadings (equal or above 0.6)	Factor	Mean	Cronbach alpha
Solve problems analytically	0.80			
Develop a plan/concept before engaging in more complex work	0.85	Relationship to work	4.24	0.76
Measure and analyze the results of your work	0.80			
Have a flexible work schedule	0.70			
Achieve goals set by yourself	0.62	Relationship to colleagues	3.88	0.61
Work in a team	0.77			
Have a close relationship with your coworkers	0.64			
Work for an organization that sets goals you are expected to achieve	0.73			
Feel connected to your organization	0.80	Relationship to organization	3.83	0.68
Have routines in your work life	0.71			
Have a long-term contract with the organization you are working for	0.61			
Have job security		Insufficient factor loading		
Understand how your work is connected to others'		Insufficient factor loading		
Have input from multiple team members on decisions		Insufficient factor loading		
Are in a position to make independent decisions		Insufficient factor loading		

physician responses. Applying scree test (Cattell, 1966) and Kaiser-Guttman (Guttman, 1954; Kaiser & Diekmann, 1959) criteria confirmed a three-factor solution.

Relationship of Professional Culture Drivers to Intrinsic Motivation

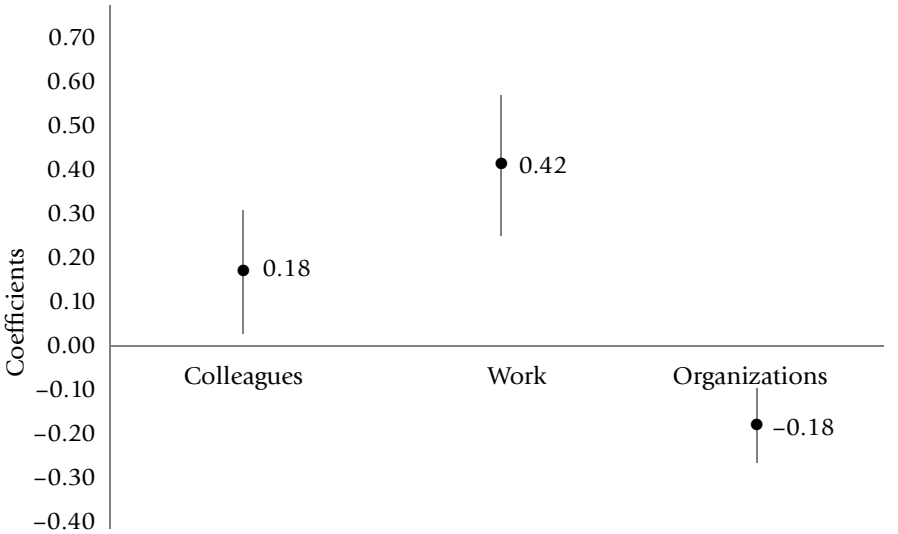
The contribution of the extracted factors to intrinsic motivation and to the subscales enjoyment and challenge was subjected to regression analyses, controlling for age, experience, and sex as shown in Table 2.

The study revealed that the relationship to work factor has the strongest (and a positive) impact on intrinsic motivation ($\beta = 0.42$) in general as well as on the enjoyment ($\beta = 0.39$) and challenge ($\beta = 0.47$) subscales ($p < .05$). Thus, work conditions are the most important lever with which to change professionals' motivation level and behavior. Relationship to organization has a negative impact on intrinsic motivation and both subscales ($\beta = -0.18, -0.12, -0.30$; $p < .05$). Relationship to colleagues shows a low positive significance for the intrinsic scale but no significance for the subscales ($\beta = 0.18, 0.17, 0.21$). These relationships are shown in figures 1 through 3.

TABLE 2
Regression Analysis Summaries for Professional Culture Variables Predicting Intrinsic Motivation, Enjoyment, and Challenge

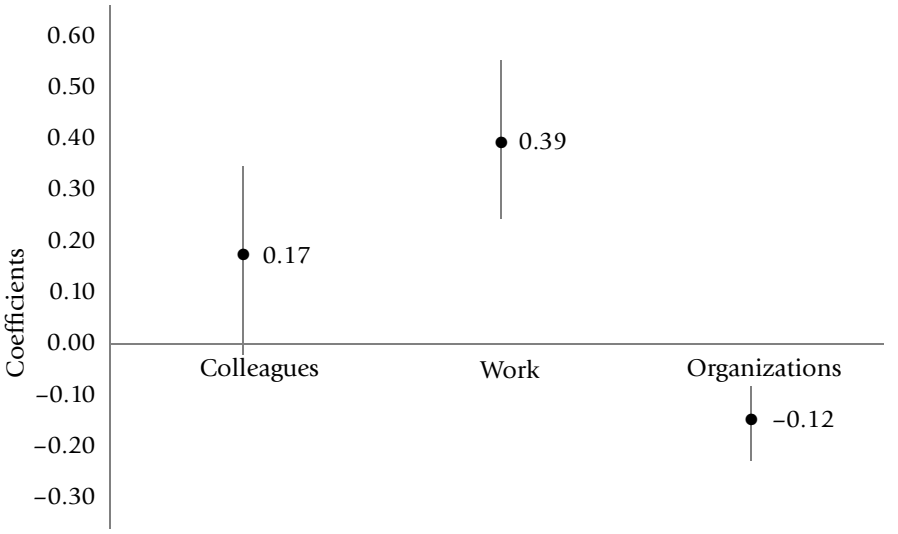
	Factor	Coefficient	*SE*	*t*	$p > \|t\|$	[95% confidence interval]	
Intrinsic							
	Colleagues	0.1835	0.0941	1.95	.056	−0.0045	0.3715
	Work	0.4174	0.1005	4.15	.000	0.2168	0.6182
	Organization	−0.1832	0.0505	−3.63	.001	−0.2841	−0.0823
	Constant	1.9261	0.4663	4.13	.000	0.9949	2.8574
Enjoyment							
	Colleagues	0.1690	0.1103	1.53	.130	−0.0513	0.3893
	Work	0.3919	0.0942	4.16	.000	0.2038	0.5799
	Organization	−0.1232	0.0591	−2.09	.041	−0.2412	−0.0052
	Constant	1.9042	0.4395	4.33	.000	1.0265	2.7820
Challenge							
	Colleagues	0.2125	0.1272	1.67	.100	−0.0415	0.4666
	Work	0.4688	0.1615	2.90	.005	0.1462	0.7913
	Organization	−0.3033	0.0833	−3.64	.001	−0.4696	−0.1370
	Constant	1.9699	0.6816	2.89	.005	0.6086	3.3312

FIGURE 1
Professional Culture Factors Predicting Intrinsic Motivation*



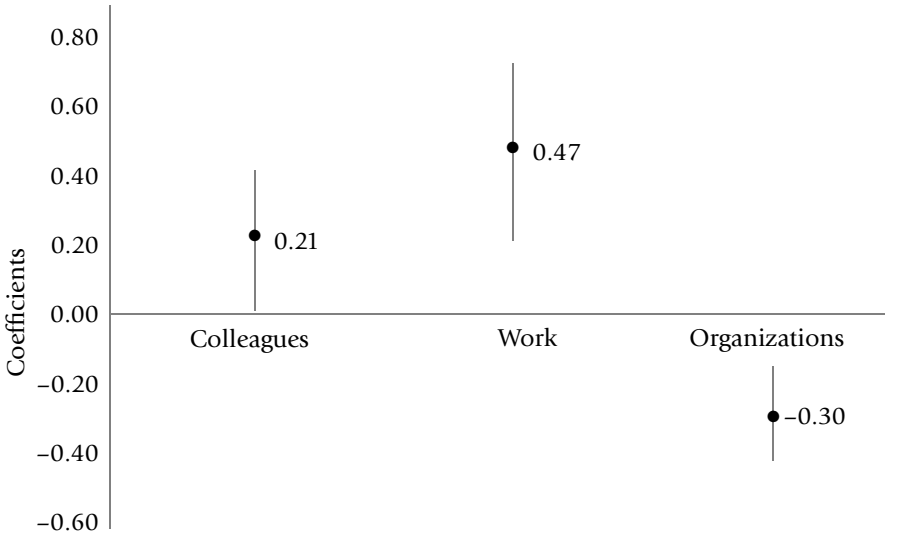
*p = .05.

FIGURE 2
Professional Culture Factors Predicting Enjoyment as an Intrinsic Motivation Factor*



*p = .05.

FIGURE 3
Professional Culture Factors Predicting Challenge as an Intrinsic Motivation Factor*



*p = .05

DISCUSSION

Healthcare organizations have mostly focused on targeting professionals' extrinsic motivation for managing performance. However, this study has revealed that managing dimensions of professional culture can help influence professionals' intrinsic motivation without incurring the side effects of monetary incentives.

These results confirm the hypothesis that dimensions of professional culture have a (highly) significant impact on intrinsic motivation as well as on the subscales enjoyment and challenge. As hypothesized, professional culture did not have a significant impact on Amabile's extrinsic scales, which confirms the assumption that strategies to strengthen professional culture are only effective in enhancing the intrinsic motivation of professional knowledge workers who are primarily intrinsically motivated.

Main Dimensions of Professional Culture and Their Impact on Intrinsic Motivation

The findings suggest that the most considerable lever for managing professionals relates to the work itself. As described earlier, deriving pleasure from work content or recognition by the profession for accomplishments seems to be the most important aspect of motivation to consider for managing professionals. The negative relationship of the organization construct to intrinsic motivation supports the expectation that professional culture frequently overrides organizational culture. The organization is considered as exogenous

or as a support function but has little influence on how things are done among professionals who have their own sense-making process (Weick, 1993, 1995). Last, but not least, the relationship to colleagues factor contributes positively to intrinsic motivation, reflecting the recognition by and relatedness toward members of the profession.

Actively Managing Professionals' Motivation Through Culture

A main objective of managing individual motivation in healthcare organizations is to entice organizational members to contribute their knowledge in teams and refrain from opportunistic behavior. Research has shown that this goal can be achieved through enhancing competence in the work, maintaining perceived autonomy from organizations, and fostering social relatedness to colleagues (Janus, 2011). These elements are consistent with the factors of professional culture that were found in the analyses, and they provide insights into how these factors could be actively managed (Janus, 2011).

Enhancing Competence in the Work

In knowledge-intensive teams, P4P programs bear the risk of interrupting teamwork and alienating professionals because the willingness to contribute knowledge and exchange information decreases as a result of selective incentives (Drago & Garvey, 1998). In these situations, a salary that is based on individual competencies and supported by nonmonetary incentives, such as social recognition and institutional branding, has been shown to strengthen the competence of team members in prominent healthcare organizations, such as Kaiser Permanente and the Mayo Clinic. If the competence of team members is strengthened, they contribute their knowledge voluntarily to the work of the team (Kollock, 1998). However, they have to receive positive feedback for their contributions or for fulfilling professional norms (Deci et al., 1999b).

Maintaining Perceived Autonomy From Organizations

Closely related to strengthening individuals' competencies is maintaining autonomy, or perceived autonomy, as an essential prerequisite for creativity and complex problem solving (Amabile, 1998). Instructions and sanctions in the form of monetary incentives reduce perceived self-determination. Individuals feel controlled externally and lose interest in the work content. The fulfilment of the controlling factor moves to the center of their attention, and gaming the system becomes an essential tactic. If, however, incentives are perceived as supportive of professionals' work, a crowding-in effect results and motivation is strengthened.

Fostering Social Relatedness to Colleagues

Finally, it is essential to strengthen the perceived social relatedness among team members and toward their professional culture, which defines the sense-making process of the profession and its identity (Weick, 1993, 1995). The professional culture overrides organizational cultures in many situations and, thus, has to be the hook for management to intervene in order to strengthen intrinsic

motivation. Physicians' professional culture has undergone changes as a result of external pressures, such as litigation and lobbying, that have shifted some professional norms in the minds of doctors. However, facilitating professionalism is still the strongest means to enact obligation-based intrinsic motivation.

Largest-Impact Elements of Professional Culture and Their Benefits to Organizations

The individual items that showed the highest factor loadings on the factors provide insights into opportunities for organizations that aim to improve their support of physicians and management of professionals' motivation. The factors and their respective potential measures relate to the following aspects:

Work

- Solve problems analytically.
- Develop a plan or concept before engaging in more complex work.
- Measure and analyze the results of your work.

Implications: Create an interesting and challenging work environment, reward accomplishments, and provide a supportive framework for work processes.

Colleagues

- Maintain a flexible work schedule.
- Achieve goals set by yourself.
- Work in a team.
- Have a close relationship with your coworkers.

Implications: Allow flexible work arrangements to enhance work–life balance and family duties, acknowledge the importance of the individual within the team, and support bonding of team members through common recognition and shared infrastructure.

Organization

- Work for an organization that sets goals for you.
- Feel connected to your organization.
- Have routines in your work life.
- Have a long-term contract with the organization.

Implications: Strike the balance between organizational commitment and autonomy, offer a sense of security for individuals, and provide ways for them to identify with the organization (e.g., through branding).

Policy and Management Implications

The results of this study suggest that purposeful management of professional culture is an essential ingredient in managing professionals in organizations. In this way, policies that support medical education (the socialization process of professional culture) and a more targeted management of professional culture could help healthcare organizations to do so in their institutions and thereby increase the performance of the system.

Enhancing participation in medical and organizational decision making, improving career opportunities, and promoting professional cooperation can lead to a high level of identification to the work and motivation (Janus et al., 2008). Karasek (1979) showed in his job demand control model that decision latitude (as in job autonomy) has an impact on job identification. Other

studies have confirmed that maintaining and enhancing physician competence and control over the development of care management processes, and thereby maintaining their sense of autonomy and control, is an especially important nonmonetary aspect of these professionals' work life (Janus et al., 2008; Janus & Brown, 2007).

Limitations of the Study

Because this study focused on physicians employed at one academic medical center, caution should be exercised in generalizing the results to physicians working in other settings. In particular, these findings may not apply to community physicians, who do not typically care for patients in teaching hospitals.

Further research is required to validate the PC-Q in a larger setting. Also, more detailed research on culture (professional and organizational) and its impact on motivation is necessary. Clearly, such a study would also have to encompass evaluating discriminating factors between the two concepts and their interaction effects. Finally, a cross-national study would shed further light on the overriding nature of professional culture and its importance in healthcare organizations in various healthcare systems.

CONCLUSION

The common sense is that physicians are mainly motivated extrinsically (by money). Hence, the focus on incentivizing intrinsic motivation might seem futile. At the least, P4P has to be credited for shifting attention to the outcome of medical care and for creating awareness of the return on investment in medicine (i.e., "Do we get what we pay for?"). However, P4P's impact on quality of care is ambiguous, which does not come as a surprise because of the knowledge-intensive and complex character of many transactions in healthcare.

The more serious side effect of the activities around P4P has been that it has enticed public policy to focus largely on monetary incentives, inadequate or insufficient reimbursement for services, and the "wrong" incentives in general. The most recent management literature provides insights into how to better manage professionals in healthcare organizations and suggests that physicians are not pure utility-maximizers but show extra-role behavior that is influenced by their professional culture and goes beyond basic duties. Therefore, today's medical teams should not be managed primarily by selective incentives, such as P4P, as negative side effects inevitably result.

Healthcare systems of industrialized countries are now at a crossroads after years of monetization and economization based on classic management theories. Modern management approaches have to include and actively support professional identity and culture, which foster enjoyment-based and challenge-/obligation-based intrinsic motivation. Otherwise, if we do not learn how to manage performance in medicine, we might, in fact, have to pay for it in the end.

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PRACTITIONER APPLICATION

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According to the American Medical Association, about 60% of family physicians (internists and pediatricians), 50% of surgeons, and 25% of surgical subspecialists (e.g., otolaryngologists, ophthalmologists) are employed, either by hospitals and health systems or large physician group practices (Leigh, Tancredi, & Kravitz, 2009).

As physician employment has evolved within the structures of larger entities, compensation and incentive structures have become increasingly complex. There has also been a systemic shift toward population health and reimbursement based on performance. Larger organizations, many of which have traditionally established compensation formulas based on productivity, are transitioning from formulas based solely on volume to formulas that focus on clinical quality and management of the population's health. In a recent article in *The New York Times*, Mark Smith, of Merritt Hawkins, notes that 35% of the jobs for which his firm is recruiting include quality-based incentive compensation (Rosenthal, 2014). However, it is well established that the size and prevalence of these incentives is not yet high enough to influence physician behavior.

Interestingly, the research in this study highlights the finding that the focus of physician alignment through a combination of compensation and incentives may be

misplaced, as such alignment strategies focus on extrinsic factors. The author states that extrinsic factors are inadequate to change physician behavior and are disruptive in facilitating broader organizational culture change. Based on the research, pay for performance is too individually focused to be effective and often places members of the same team into an antagonistic situation, competing against one another rather than aligning toward a common vision.

The researcher also found that physicians are more highly motivated by intrinsic factors. Therefore, stronger organizations will be developed through facilitating the physicians' involvement in and leadership of medical and organizational decision making, thereby improving career opportunities and promoting broader professional cooperation.

In the 1940s and 1950s, psychologist Abraham Maslow identified a direct correlation between human motivation and personal growth. Those individuals who functioned at the top of their abilities were self-actualized and more fulfilled (McLeod, 2007). The research in this article provides some clear opportunities for aligning physicians in such a way that they can achieve higher levels of professional fulfillment. Over time, this approach will provide greater career satisfaction than pure extrinsic motivation will. And certainly, professional satisfaction will have a positive impact on behavior, burnout, medical errors, patient satisfaction, and clinical outcomes.

North Shore-LIJ Health System has taken this approach. The alignment and integration of physicians in the organization's senior leadership structure is rapidly evolving, and the goals of this evolution are to foster professional career development, organizational alignment, and continuous improvement in outcomes and patient satisfaction through a more consistent, integrated approach than individually based pay-for-performance incentive metrics.

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ABSTRACT FROM THE ACADEMY OF MANAGEMENT

TITLE. Can Entire Departments Be Burned Out? A Conservation of Resources Perspective on Burnout Contagion

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GOAL. Healthcare managers recognize that burnout can be contagious within work units, disrupting the performance of large employee groups, even entire departments. Emotional exhaustion can be quickly transferred between employees until the whole department is infected and its functioning is disrupted. However, the scholarly literature provides little evidence-based guidance for healthcare managers to develop and implement effective burnout prevention and reduction tactics at the department level. Therefore, this study had two purposes. The first purpose was to empirically test whether burnout is a contagious, department-level phenomenon. The second purpose was to examine the extent to which department-level burnout is associated with four department-level effectiveness outcomes: problem solving, interpersonal trust, goal setting, and performance.

METHODS. We drew on the conservation-of-resources model (Hobfoll, 1989) to develop a theoretical framework about how burnout becomes contagious and disrupts the effectiveness of hospital departments. Using a combination of survey and interview methodologies, we tested our model with a large sample of employees from a hospital in the southern United States that was organized into 65 departments.

PRINCIPLE FINDINGS. Intraclass correlation analysis demonstrated clear evidence of burnout contagion within departments (i.e., burnout was shared between department employees). Moreover, ordinary least squares regression analysis showed that low-burnout departments scored substantially better than high-burnout departments on problem solving, interpersonal trust, goal setting, and overall performance.

APPLICATIONS TO PRACTICE. Healthcare managers should regularly monitor burnout, not only in individuals but particularly in business units. This monitoring could be performed through interviews or attitude surveys to identify departments that are burned out or at risk for burning out. Management could intervene to treat or prevent the deleterious effects of department burnout contagion by reducing department job demands and increasing department resources. For example, department demands could be reduced by job redesign, job rotation, and adequate staffing.

Department resources could be increased through team building, personal management interviews, and participative systems. Our evidence suggests that such interventions would improve department effectiveness.

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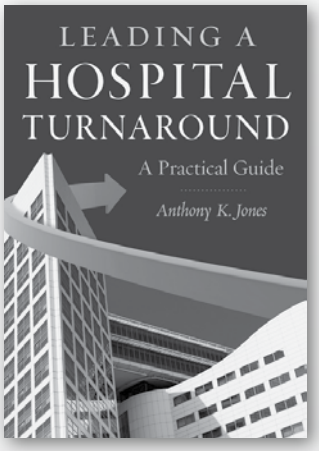

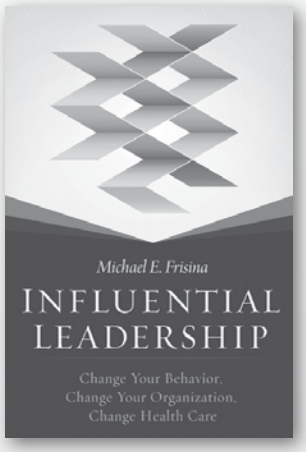

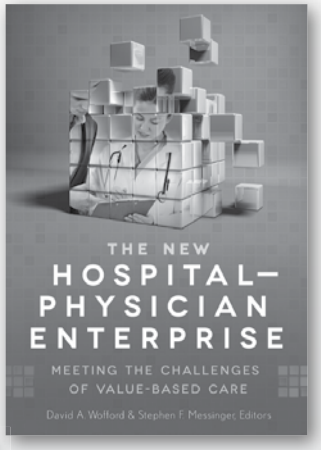

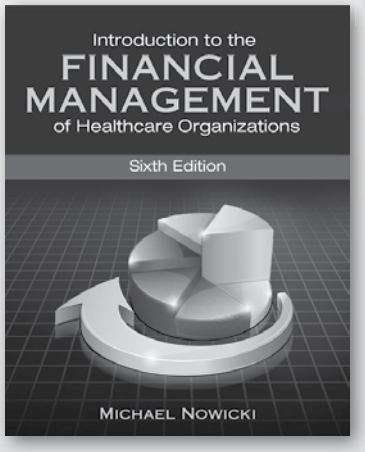

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