PRESCRIPTIONS FOR EXCELLENCE IN
HEALTH CARE

A COLLABORATION BETWEEN JEFFERSON COLLEGE OF POPULATION HEALTH AND LILLY USA, LLC

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Prescriptions for Excellence in Health Care is brought to Population Health Matters readers by Jefferson College of Population Health in partnership with Lilly USA, LLC to provide essential information from the quality improvement and patient safety arenas.

EDITORIAL
Back to the Future
David B. Nash, MD, MBA
Editor-in-Chief

A little more than a decade ago, the Picker Institute commissioned the Institute for Alternative Futures (IAF) to help create "a shared vision for patient-centered care." Back in 2004, patient-centered care was not even in the lexicon of most hospitals, nursing homes, or medical practices – this was true for Canada and Europe as well as the United States. Barak Obama was still an Illinois state senator and the notion that sweeping health care reform might take hold in the United States would have been met with skepticism or even ridicule.

The IAF developed 10 alternate "forecasts" as the basis for interviews with 50 prominent health care industry leaders. From these interviews, researchers created 4 possible scenarios for patient-centered care in 2015.

Scenario 1 foresaw "almost everyone" having access to basic health care, employers shifting to defined contributions, and providers engaging more affluent consumers in patient-centered care to boost their patient satisfaction scores.

Scenario 2 foresaw continued double-digit health care inflation, a health care system collapse in 2009, government-instituted price controls, a growing number of "health care refugees" with no access to care, and a nosedive in health care quality and safety (except for the top 10% of wealthiest Americans).

More optimistically, Scenario 3 foresaw a convergence of scientific knowledge, information tools, and public understanding and acceptance of a transformed health care system. High quality, safety, and patient-centeredness prevailed at a cost (16% of gross domestic product).

Finally, Scenario 4 foresaw a collaborative environment with health services structured to allocate accountability and incentives to patients, physicians, and other stakeholders. Hallmarks included: open access to information, coaching, and support; advanced biomonitoring systems; and advances in medical, social, and spiritual technologies.

I find it fascinating that, although no scenario got it 100% right, we've made tremendous strides toward

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achieving more high-quality, safe, patient-centered care while avoiding financial and structural calamity. The articles in this issue testify to how far we've come and, more importantly, make me optimistic about where our collective journey will take us in the decade ahead.

The lead article, "Working Together To Transform Health Care: 'It Takes A Region,'" hones in on the current transition period – the problems that continue to impede health care reform and some creative yet practical solutions (eg, "co-opetition"). This is followed by "Care Guidance for Quality and Efficiency in Transitions of Care," an in-depth look at how enhanced, interoperable health information technology can

be used to improve processes, communication, and outcomes, particularly during care transitions when patients are most vulnerable.

Recognizing the growing trend toward care delivery in the outpatient setting, an article titled "Building a New Ambulatory System of Care: Using Population Health to Achieve the Triple Aim" provides a clear, concise blueprint for clinician practice transformation and value-based networks. "Mobile Integrated Health Care Practice" introduces an innovative model for comprehensive, physician-led, fully-integrated population management in the post-hospital period.

"The Windmills of My Mind" weaves another element into the discussion; the payer perspective

is a key factor in the changing health care landscape. The final article, "The Innovation Conundrum: Practical Strategies for Transforming Health Care," tackles some often overlooked issues and describes an interesting theoretical construct for creating sustainable impact.

My high praise and thanks to the authors of these articles and, as always, I welcome feedback from our readers at david.nash@jefferson.edu.

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A MESSAGE FROM LILLY

The Reverberating Human and Economic Effects of Medication Nonadherence Across the Health Care Continuum

Ashish R. Trivedi, PharmD and Ora H. Pescovitz, MD

US health care expenditures continue to spiral upward without having a significant impact on patient outcomes or quality of care. Stakeholders across the health care continuum have witnessed this phenomenon and government statistics, published reports, and advisory boards have supplied abundant evidence of this negative trend. Surprisingly, the escalating health care costs are not primarily the result of advanced technologies, innovative therapies, or state-of-the-art medical facilities; rather, they are a consequence of wasteful spending.[1,2,3] Medication nonadherence is a principal source of waste in the health care system,[1,2,3] and the human and financial impacts of medication nonadherence reverberate across all stakeholders - patients, providers, payers and pharmaceutical manufacturers.

Hippocrates once declared, "The Physician must not only be prepared to do what is right himself, but also to make the patient, the attendants and externals cooperate."[4] This is evidence of an adherence challenge that has endured for many millennia.

So, how do we define medication nonadherence? The Agency for Healthcare Research and Quality defines it as patients not conforming to their provider's recommendations with respect to timing, dosage, and frequency of medication during the prescribed length of time.[5] Medication nonadherence can be further divided into primary and secondary types. Primary medication nonadherence occurs when patients fail to fill their first prescription; thus, recommended treatment plans are never initiated. Secondary nonadherence refers to the patient's failure to refill a prescription after the initial

fill (because of intentional or unintentional factors) or not following treatment directions appropriately. The vast majority of peer-reviewed literature and research on medication nonadherence relates to secondary nonadherence. Recent advances in health information technology will enable the health care system to identify, measure, and assess the critical impact of primary nonadherence.

The American College of Preventive Medicine estimates that up to 50% of patients are not adherent to their medications.[6] To illustrate the patient's nonadherence journey: for every 100 prescriptions written by a provider, up to 70 are filled at a pharmacy, 66 of which are picked up by the patient and 30 of which are taken correctly at home. Remarkably, only 20 prescriptions are refilled at the pharmacy.[6] This leads us back to the unresolved question: what causes medication nonadherence?

There are several schools of thought on this topic, all of which share common themes for causation. However, the World Health Organization broadly addresses medication adherence by stating that there are 5 interacting dimensions (factors) that lead to nonadherence (Table 1).

The multifaceted nature of poor adherence results in poorer health outcomes and quality of life, increased hospitalizations and hospital readmissions, and premature death. Poor medication adherence is directly responsible for up to 25% of hospitalizations and hospital readmissions annually, accounts for 30%-50% of treatment failures (obscuring providers' assessments of therapeutic effectiveness and leading to avoidable treatments and procedures), and ultimately results in 125,000 deaths annually.[1,3,6,7,8]

What are the financial ramifications of poor medication adherence? Today, US health care expenditures constitute roughly 18% of gross domestic product or $2.8 trillion annually - and this figure is mounting.[3] According to the Institute of Medicine, nearly 30% ($750 billion) of annual US health care spending is wasted on unnecessary services, excessive administrative costs, and other systemic inefficiencies.[3] This amount of waste is greater than the US $600 billion annual defense budget.[9] When we hone in on medication nonadherence, the direct cost to the health care ecosystem is nearly $290 billion caused by increased hospitalizations, readmissions, additional treatments, and other drug-related morbidities.[1,3,7,8]

All stakeholders are financially impacted by nonadherence:

- **Payers** must provide additional and potentially unnecessary coverage for exams, procedures, additional treatments, and/or may risk financial penalties from poor performance on quality measures

- **Patients** may incur additional costs for hospital stays, treatments, and/or indirect cost burdens

- **Pharmaceutical** production may exceed anticipated demand resulting in unused drugs and lost revenue

- **Providers** experience increased administrative burdens, service utilization, and/or financial penalties from poor performance on quality measures (eg, adherence, 30-day readmissions, Physician Quality Reporting System, Medicare Advantage 5-Star Ratings)

Table 1: Factors Leading to Nonadherence

Adapted from: Osterberg L, Blaschke T. Adherence to medicine. *N Engl JMed*, 2005;353:487-497; McHorney CA, et al. Frequency of and reasons for medication non-fulfillment and non-persistence among American adults with chronic disease. Health Expectations, 2011;14:307-320; Sabate E, Ed. Adherence to long-term therapies – evidence for action. World Health Organization, 2003. http://www.who.int/iris/handle/10665/42682.

FACTORS	Socioeconomic	Therapy Related	Patient Related	Condition Related	Health System + Health Care Team
A FEW EXAMPLES	• Cost of co-payment or coinsurance • Lack of health insurance • Medication cost • Access restrictions (ie, formulary, utilization management) • Lack of family or social support	• Complexity of treatment (ie, pill burden, changes in schedule, duration of therapy) • Side effects • Lack of immediate therapy benefit	• Lacks belief in benefit of treatment • Lacks insight into the illness • Health literacy • Poor relationship between patient and provider • Missed appointments • Access to care (hospital or pharmacy)	• Asymptomatic disease • Disease states with social stigma • Number of comorbid conditions	• Poor relationship between patient and provider • Inadequate follow-up, discharge planning, or continuity of care • Knowledge of health literacy issues • Lack of empathy and/or positive reinforcement • Amount of prescribed medications and complexity of treatments

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Although the cost of medications is roughly 10% of total US health care expenditures ($300 billion), there is a substantial medical cost offset in terms of preventing diseases, treating chronic conditions, averting invasive procedures, sustaining good health, and preventing premature death.

We have discussed the financial impact of adherence to the health care ecosystem, but what is the direct impact on the pharmaceutical industry? A recent Capgemini study found that the pharmaceutical industry lost $188 billion annually in revenue because of primary and secondary medication nonadherence.[10] Further analyses revealed that bridging the adherence gap by 10% would improve clinical outcomes, benefiting patients and the health care industry alike, as well as generating an additional $41 billion in revenue annually for the pharmaceutical industry. This additional revenue could be reinvested to fund research, develop innovative therapies, and devise solutions to enduring health system problems such as adherence. The US Centers for Disease Control and Prevention recognizes the appropriate use of novel drugs - and the expanded use of existing ones - as primary factors in driving the death rate down by 60% over the last 75 years.[11]

Pharmaceutical manufacturers are uniquely positioned to take a leading role in improving patient adherence. In other industries, product developers understand their customer's behaviors, provide ongoing services, and help consumers to utilize their products appropriately –- think of the Apple Genius Bar, for example. There are tremendous opportunities for drug makers to go beyond traditional educational and reminder programs with innovative efforts to improve adherence.

One potential opportunity involves leveraging "Big Data." Pharmaceutical manufacturers have vast internal scientific expertise that could be coupled with external data generated by patients (eg, mobile health apps / wearable technology), providers (electronic medical records), retail pharmacies (electronic fills/dispensed), and claims data to understand patients' medication usage patterns and behaviors.[12] Once these data sources are aggregated and analyzed, tailored customer adherence tools and marketing programs could be developed to help providers and consumers utilize pharmaceutical products appropriately and consistently. In addition, adherence strategies could be centered on

improved medication delivery systems and packaging, innovative co-payment strategies, or unique gamified mobile applications. Some of these strategies will require changes in the regulatory and enforcement environment to remove barriers and clearly define the scope of appropriate partnerships across these stakeholders.

Despite our best efforts, adherence levels will never be 100%; however, the goal for all stakeholders should be to jointly raise adherence rates from current levels. Medication nonadherence continues to be an important public health problem.[1] All in all, improved medication adherence benefits all stakeholders: providers are able to improve patients' outcomes while avoiding serious and costly procedures/treatments; payers benefit as patients avoid costly procedures/treatments leading to plummeting expenses overall; pharmaceutical manufacturers benefit from anticipated and/or augmented revenue; and, most importantly, patients can appreciate increased drug efficacy, improved safety, and better clinical outcomes. As former US Surgeon General C. Everett Koop reminded us, 'Drugs don't work in patients who don't take them."[13]

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Working Together To Transform Health Care: "It Takes A Region"[1]

Marjie Harbrecht, MD

The Problems

Although we're making progress toward achieving better quality, reducing costs, and improving the experience of care for patients and their health care teams, the evolution is slow, tedious, and somewhat painful. This should come as no surprise to anyone; all change is hard, and the magnitude and complexity of health care reform is epic.

The "transition period" is particularly challenging because the difficulties associated with change are compounded by a lack of infrastructure to support value-based care and misaligned incentives that make providers feel as though they have 1 foot on the dock, the other on the boat…and the boat is starting to move. For instance, many providers continue to be paid on a fee-for-service basis (ie, incented to increase the volume of services) even as they are expected to adopt value-based care and population management models (ie, incented to emphasize prevention and planned, proactive management of complex patients, using a multidisciplinary team of professionals and coordinating care across multiple entities). Despite major investments in expensive technology, information systems are neither interoperable nor capable of producing the data needed to guide redesign efforts and achieve the expected results. Given these and other circumstances, many providers and health systems are reluctant to fully commit to change,[2] and there is a disturbing increase in reports of burnout as physicians try to reconcile the boat and the dock.[3]

The transition period is also problematic for others as they struggle to balance their own structural and cultural redesign while trying to differentiate themselves in the marketplace. To date, market competition among certain stakeholders has actually driven fragmentation and increased administrative burden for health care providers. For instance, when each health plan in a region has its own requirements, quality metrics, program milestones, and payment structures, health systems and providers must report on hundreds of metrics and reconcile conflicting payment formulas.

Similarly, when competing large health systems opt out of participation in health information exchanges (HIEs) or other community-wide efforts, it can impede timely access to critical data when patients are seen outside of their systems. Finally, a majority of the decisions about participation in data aggregation and enhanced payment models are now made by a growing group of payers: self-funded employers.[4] If these payers fail to participate in new payment models associated with Patient-Centered Medical Homes and Accountable Care Organizations, it may result in decreased funding for provider redesign efforts (eg, hiring care managers) and lead to disparities in care such that only patients whose employers or health plans cover care management services will receive them.

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The Solution

It is understandable that providers, health plans, employers, and health systems that have survived managed care, pay for performance, and other mechanisms to "fix" our broken system are skeptical about adopting new models of care too quickly. However, when key stakeholders merely put a toe in the water, it leads to misalignments, reduces the likelihood of success, and takes unnecessary time and effort to achieve the desired results.

To resolve these issues, particularly across communities where health care is local, it will take "all in" comprehensive initiatives that are built on a foundation of strong leadership and a shared vision, with common approaches for these essential elements:

1. Delivery system redesign with common parameters and milestones for advanced primary care practices and coordinated care across the community.
2. Common quality measures and target goals.
3. Methods for data sharing, transparency, and reporting.
4. Value-based payment models for providers that cover the majority of their population and value-based benefit designs for patients that align with provider measures and goals.
5. Consumer engagement that includes shared decision making with their providers and community-wide education campaigns.

Many previous initiatives have included only 1 or 2 of these elements: for example, managed care and pay-for-performance models that focused on payment without delivery system redesign were not effective; and employer wellness programs and/or benefits designs have rarely aligned with physician metrics, thereby missing opportunities to incent shared goals and reduce perceptions of "noncompliance." To truly transform our health care system, it will require a multifactorial approach that *simultaneously* aligns all of the aforementioned elements to achieve and sustain the desired outcomes and accelerate movement through this difficult transition period.

Although not easy to obtain, multi-stakeholder agreements that include all these elements will reduce administrative burden on providers and enable them to focus on building essential infrastructure and redesigning care processes. It also will encourage health plans to compete on things that increase *value* – high-quality services and lower cost products that employers and consumers want to buy.

Competing on Value Through "Co-opetition"

It would be naïve to assume that fierce competition in the market will disappear anytime soon and, for a variety of reasons, that need not occur if we compete on the right things. A concept called "co-opetition"[5] recognizes the need to collaborate on some things and compete on others. Co-opetition is said to occur when

companies cooperate with one another to create higher value than the value created without interaction. Often, co-opetition occurs when companies in the same market work together to explore new knowledge and research new products while each exploits the knowledge created and competes for market share of products. Benefits are realized when companies save money on shared costs while remaining fiercely competitive in other areas.[5]

Consistent program parameters, measures, data aggregation, payment structures, and benefit designs make it possible to compare products and services to determine which offer the best value for the health care dollar. As employers and patients gain control of more health care dollars, value will grow more meaningful and, ultimately, it will fuel demand; providers with the best outcomes and customer service at the lowest cost will be the winners.

The Benefits

Collaboration among multiple stakeholders reduces fragmentation, galvanizes communities through consistent messaging, and saves health care dollars by decreasing redundancy and sharing costs, particularly when building infrastructure. For instance, support for community-wide Health Information Exchanges and/or all-payer claims databases can effectively distribute expenses, improve coordination of care, and save millions in redundant testing that can be reinvested in value-based care. As more health plans and employers

participate in data and payment efforts, providers will be more successful in transforming their practices, engaging patients, and achieving results. Other examples include community Learning Collaboratives where expenses for conference space, food, national experts, and coaches are shared to help multiple practices embed new care models, and shared support for Tobacco Quitlines and other important community health resources.

Among the successes through multi-stakeholder initiatives and co-opetition are the Colorado Multi-Payer Patient-Centered Medical Home Pilot,[6,7] The Health Collaborative of Cincinnati,[8] and the Multi-State Collaborative supported by Milbank Memorial Fund.[9] Perhaps the broadest example of successful co-opetition is the Medicare-led Comprehensive Primary Care initiative that is engaging multiple payers and practices in 7 markets across the country to redesign how care is delivered and compensated.[10] By leveraging collaborative efforts and shared investments, many communities have raised significant additional dollars from foundations, government agencies, and other sources to accelerate their work.

Conclusion

An African proverb states that if you want to go fast, go alone; if you want to go far, go together. The need to solve complex social issues is not unique to health care. There is growing momentum around a method called "Collective Impact,"[11] in which organizations from different sectors agree to solve a specific social problem using a common agenda, aligned efforts, and common measures of success. What sets US health care apart is the urgency needed to fix the system so that all citizens receive the care they need at the right time, in the right place, and at the right cost. Achieving this goal and navigating through the uncomfortable transition period will require an all-in comprehensive approach with:

1. Medical groups willing to redesign and coordinate care across tribal boundaries.
2. Hospital systems willing to invest in different business models that will produce high-quality/low-cost (value-based) services rather than bricks and mortar.
3. Health plans willing to transition to value-based payments, collaborate in multi-payer initiatives with common measures, redesign milestones and goals, and provide practices with actionable data that are aggregated across plans.
4. Employers willing to engage and incent employees with value-based benefit designs and participate in multi-payer initiatives with enhanced payment and data.
5. Patients/consumers willing to engage in their care, increase healthy behaviors, and make value-based choices.

Finally, unless we specifically address and concentrate efforts on leadership, engagement, and culture change at all levels, this work will continue to be painstakingly difficult, and consistent outcomes will be unattainable. Regardless of the payment model or delivery system redesign method used, it will be the intrinsic motivation to serve patients and communities that will make the difference. Bottom line – it's really all about relationships!

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Care Guidance for Quality and Efficiency in Transitions of Care

Jeffrey S. Rose, MD

Transitions between care venues are a significant source of errors in communication that lead to adverse events and gaps in care for patients in our fragmented health system. When care is uncoordinated or handoffs are suboptimal, inappropriate and resource-consuming miscommunications occur and patients may experience unsafe or delayed care and potential isolation from recommended monitoring or follow-up.

Across a person's health journey, there are many key transitions in care that affect his or her ultimate health outcome[1]—admission to the hospital, discharge from the hospital, and reentering the community being chief among them. Despite national and local initiatives to address this issue, the failure to communicate and coordinate across transitions continues to be an immense challenge.[2]

Understanding transitions and the information and processes required to optimize outcomes is essential. Optimally managed transitions can protect the patient from harm and facilitate the best possible recovery; poorly managed transitions can lead to measurably dysfunctional, expensive, and undesirable events (eg, hospital readmission, lowered productivity at work, diminished quality of life, unnecessary personal expense, complications associated with missed therapeutic interventions).

To ensure the best possible outcomes, everyone involved in the patient's care must have timely access to appropriate, evidence-based care guidance. Care guidance goes beyond information technology (IT) solutions or traditional clinical decision support by uniting evidence, technology, and workflow—providing the best possible result and supporting maximal value for population health maintenance. Because gaps in care or deviations from the care plan can dramatically alter a patient's ultimate health outcome, transitions are most critical in high-risk populations.

Well-designed interoperable care guidance solutions are helpful in making smooth, seamless transitions.

Sample Case Using a Care Guidance Solution

A 74-year-old female with congestive heart failure and type 2 diabetes with renal insufficiency presents in the emergency department (ED) with complaints of shortness of breath and chest pain. This patient will achieve the best possible outcome if everyone who cares for her or who makes decisions about her care has access to care guidance solutions.

Care Guidance–Enhanced Hospital Admission

Ideally, the patient should have a medication reconciliation interview with the nurse while in the ED. Once data regarding medications brought to the ED are entered into the IT system, the information can be augmented with the patient's medication list from outpatient providers and prescription information from retail pharmacies. Supported by IT, the patient can be admitted, if necessary, to the right level of care (eg, inpatient versus observation) based on clear clinical guidelines. This type of computer-assisted care guidance gives the physician and case manager the ability to document the admission decision clearly and defensibly in the medical record and alerts the patient's community-based care manager of the admission via an automated notification. The care manager, in turn, is able to communicate additional details regarding the patient's wishes or care needs to the hospital-based care team.

Care Guidance–Enhanced Hospital Discharge

It is important that patients at higher risk of readmission be identified during their hospital stays so that their next stage of care can be managed at the appropriate level. In this case, a care guidance solution can flag the patient as higher risk based on her renal insufficiency, and recommend a multidisciplinary postdischarge program including home care.

Using evidence-based criteria to measure progress, the care team can monitor and determine when the patient is well enough to be discharged. Care guidance also

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suggests the most appropriate postdischarge level of care—which, in this case, may be home care with telephonic case management—and the appropriate number of home health visits based on national benchmarks.

The hospital physician can use 1-touch technology to notify the entire care team—primary care physician, case manager, community care manager—that discharge orders have been written for the following day and that the patient is at risk for readmission. As Donald Berwick, MD, MPP, and other leaders have made very clear, continuity across care sites is integral to achieving the Triple Aim; the 2 most dangerous terms in our health care lexicon may well be admission and discharge, both of which imply discontinuity in our processes.

Care Guidance–Enhanced Community Reentry

Interoperable care guidance allows the hospital physician's order for home care to be communicated automatically to the home health agency. The agency receives a notification and a workflow task, accepts the referral, verifies the diagnosis and eligibility, and contacts the patient to set up the first visit. The seamlessness of this transition keeps the patient's care on track, without delays that could threaten her recovery.

The patient's transition into the community can be managed closely with care guidance that enables the case manager to communicate directly with all members of the patient's care team by using secure messaging that is focused on the patient's progress and goals.

With interoperable drug knowledge to enable e-prescribing, the patient's prescriptions can be ready for her upon discharge without delay, with care guidance to validate the prescriptions' accuracy and safety through interaction checking.

Conclusion

Readily available care guidance solutions that leverage content, technology, and workflow afford an opportunity to protect the patient from harm, provide the appropriate care services in a timely manner, keep all care providers in close communication, and assure continuity in the care process. Throughout each health care journey, many people—including the patient and the patient's family—have a hand in ensuring optimal care. It is vital for all team players to have comprehensive understanding in order to know what to do and to take appropriate timely action in accordance with known best practices. For this reason, information must be shared among care participants in a format that is commensurate with their professional capacity and expertise—and that is compatible with workflow—such that each contributes to the optimal course of care. The information and the knowledge fueling these actions should be unbiased, evidence based, and easily translated between the tools used to support the care, processes, and relationships that ensure the most satisfying, safe, and effective health outcomes.

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Building a New Ambulatory System of Care:
Using Population Health to Achieve the Triple Aim
Christopher T. Olivia, MD

The Shifting Center of Influence

The verdict is in: a robust ambulatory care organization is essential for the future of health care.

Although mandates associated with the Patient Protection and Affordable Care Act (ACA) are accelerating the shift from acute to ambulatory care, the trend has been in motion for more than a decade. Between 2004 and 2011, inpatient admissions for Medicare beneficiaries declined 7.8% while outpatient volume rose by 33.6%.[1] Data from the American Hospital Association further support the shift, as inpatient admissions for 1991-2011 declined 9% and outpatient services increased 65% over the same period (Figure 1).[2]

Clinical and technological advances that allow for procedures outside the hospital, and declining reimbursements from both

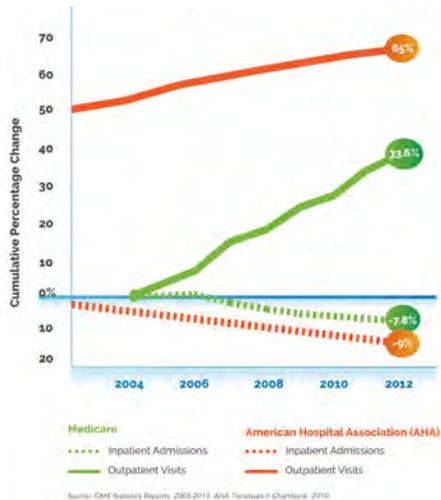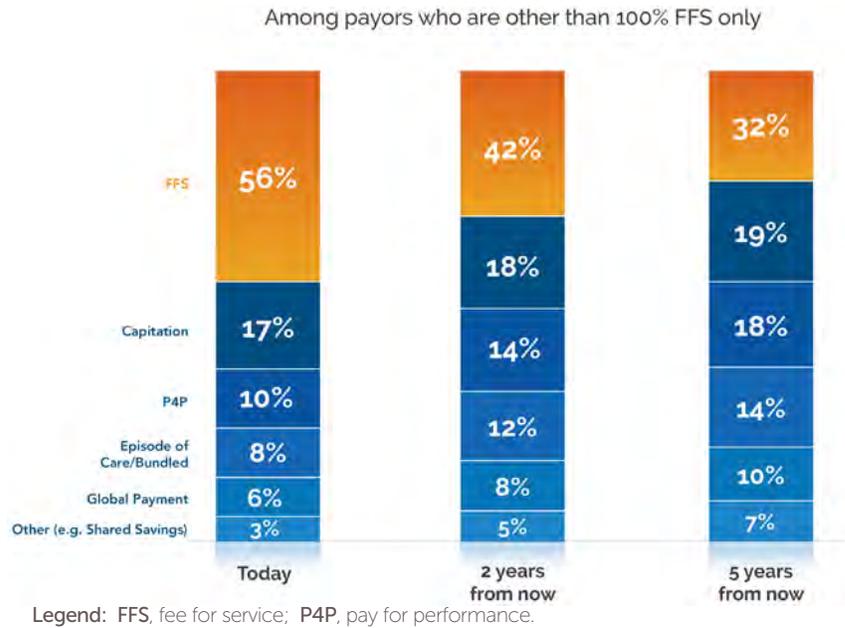## Figure 1. Inpatient Admissions Decrease as Outpatient Visits Increase

Figure 2. Future State – Projected mix of payment models within an organization

Legend: **FFS**, fee for service; **P4P**, pay for performance.
*Source: McKesson Health Solutions, 2014

government and commercial payers for inpatient admissions (and penalties for readmissions) have contributed to these migration patterns. But perhaps no other factor has had greater impact than the shift from volume to value-based health care. Payers are requiring that providers improve quality, enhance the patient experience, and lower the overall cost of care–the Triple Aim–in order to meet outcomes-based contract goals. Although they are essential to the health care ecosystem, acute care providers are struggling to configure their services to drive affordable care and manage population wellness.

Conversely, ambulatory providers and their care teams are uniquely positioned upstream to provide easier patient access, impact

outcomes at an earlier stage, and deliver care at a lower overall cost. Of course, as ambulatory networks have grown, so too have the challenges. Even "aligned" providers are seldom fully integrated, nor are they equipped to properly coordinate care and meet shared performance goals–a critical prerequisite for value-based success.

Value-Based Health Care Is Here to Stay

Payers and providers agree that traditional fee-for-service (FFS) will decline over the next 5 years. Although percentage estimates differ slightly, many stakeholders expect value-based purchasing (VBP) models to represent nearly 70% of provider reimbursement by 2019 (Figure 2).[3]

Figure 3. New ambulatory system of care

Practice Management as "On-Ramp"

Practice Transformation

Population Health Management

New Ambulatory System of Care

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Pay for performance, bundled payments, global payments, shared savings, and other risk/reward arrangements will dominate the landscape and require providers to adapt and innovate as quality, patient experience, and cost goals change from year to year.

Providers have always regarded high-quality care as imperative, but they are often challenged by the sheer number and variety of competencies required to thrive in accountable care programs. As market dynamics continue to evolve, provider organizations will need to master the skills of determining patient attribution, gain greater facility with the electronic health record (EHR) and other decision-support technologies, learn how to identify and close gaps in care, effectively coordinate patient care across the health continuum, and accurately report outcomes to payers and other financiers of health care.

An effective ambulatory care strategy – with practice transformation and comprehensive population health management at its core – provides the business, clinical, and technological foundation required to address these demands.

A Strategic Framework for Success

Achieving the Triple Aim necessitates a new strategic framework that enables providers to succeed in both FFS and VBP models. Providers must walk before they run (ie, strengthen the business and clinical infrastructures and commit to practice transformation before implementing population health management). Once achieved, these components create a new ambulatory system of care, as illustrated in *Figure 3*.

Practice Management as an "On-Ramp"

Provider organizations should take stock of their existing management practices before venturing into practice transformation and population health management. A revenue cycle management solution that supports FFS reimbursement collections should be kept in place as a practice transitions to fee for value programs. In addition, provider EHRs should be meaningfully used, integrated into the provider workflow, and meaningfully structured to effect positive change in provider practice behavior at the point of care. For example, additional clinical data may be extracted from an external database (eg,

evidence of pneumovax received at a CVS pharmacy), analyzed, and displayed within the EHR.

A Commitment to Practice Transformation

True practice transformation calls for culture change as well as investment in tools that empower clinical transformation and the delivery of value-based health care. Change is difficult for even the most advanced organizations, and especially challenging for independent-minded physicians. Altering the status quo requires providers to commit to several key principles:

- **Engaged Leadership:** Practice transformation calls for united senior leadership, especially physician leadership, that is focused on building and driving a practice in which every member of the team is accountable for patient outcomes and experience.

- **Redefined Roles:** Redefining roles and redistributing specific tasks–rather than hiring additional staff–results in greater efficiencies, improved workflows, and positive health outcomes. For example, a local care director works with outside patient care coordination teams by helping to identify patients in need of coordinated care, collaborating with the physician and care coordinators, and implementing specific interventions on behalf of the care team.

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- **Strong Patient/Care Team Relationships:** One of the most important components of transformation is the bond built between the patient, the physician, and the entire care team. A well-trained support team delivers a large percentage of the patient's care, and the shift from a task-oriented mentality to a patient-centered mind-set creates a proactive focus on keeping patients well.

- **The Care Team Includes the Patient:** An effective care team features the patient as an active member, along with the lead physician and the support team. A growing body of evidence suggests that patients who are more actively involved in their health care often experience better health outcomes at lower overall costs.[4]

- **Enhanced Access:** Provider care teams focused on keeping patients well find ways of making patient care more accessible and easy to understand.

- **Quality Improvement Strategy:** Practice transformation includes an effective improvement strategy that focuses on an organization's service delivery approach or underlying systems of care. These include workflows based on lean operating principles, as well as automated patient-, population-, and practice-view dashboards, provider alerts and reminders, referral management, and performance metrics and reporting.

- **Patient Panel Management:** Practices that prioritize care for clinical high-risk patients focus precious resources on areas of greatest impact. Such fiscal efficiency enables practices to expand the size of their patient panels, and helps to address the nationwide demand for increased numbers of primary care physicians.

Adopting an Innovative Population Health Management Platform

Much has been written about the core principles of population health management. To excel, providers need a comprehensive model that responds to the complex requirements of accountable care programs. Many organizations around the country have invested heavily in technology tools but still struggle to achieve value-based success, largely because population health management relies on an intersection of business, clinical and human intelligence. No single technology is capable of fulfilling every need. There are no big data or magic boxes to enable a value-based ambulatory care system. Successful value-based networks require the following elements:

- **Payment Modality:** Providers need a financing partner at the start of any program. In addition to per member per month supplemental payment and shared savings arrangements, payers also supply patient attribution, claims data, and utilization trends that assist providers with strategic planning.

- **Accurate Patient Attribution:** Under most value-based reimbursement programs, providers are accountable for an assigned patient population. Unfortunately, the accuracy of these data from commercial payers is often questionable. Although extremely challenging, patient attribution verification is vital to ensure that provider organizations undergoing the difficult process of transformation are rewarded for care associated with clinically high-risk patients and not penalized for poor outcomes associated with patients who are assigned to their panels.

- **Integrated Technology Platform:** Access to an integrated single-access platform with built-in capabilities helps optimize provider and care team adoption of population health practices and facilitates better patient care.

- **Data Normalization/EHR Data Mining:** The evolution of the health care payment system from volume to value has placed emphasis on the ability of providers to document, collect, extract, and report clinical data. These clinical data are often found in disparate systems or document types and must be "normalized"–standardized in format and content–before they can be analyzed.

Providers also must have the ability to extract data stored in structured fields within the EHR and reorganize it to provide comprehensive information that is useful for patient care and decision making. Data from the EHR should create patient-specific clinical profiles as well as population and subgroup

clinical profiles for disease-specific conditions and preventive health services. Such a disease registry highlights key parameters for patient care based on standards such as the National Committee for Quality Assurance Healthcare Effectiveness Data and Information Set metrics.

• **Highly Advanced, Predictive Analytics:** A strong population health management model includes predictive modeling technology and intelligent workflows that span the continuum of care to measure and report quality and cost metrics in real time. These analytics allow physicians and office staff to coordinate care and strategically target patients based on parameters such as disease state, preventive health measures, and patients due for a visit. Some things that should be obvious are not; for example, often patient diagnoses are not documented properly in the EHR and must be constructed from medication, testing, or other data.

• **Evidence-Based Medicine at the Point of Care:** Real-time quality informatics and disease-based quality metrics at the point of care enable the provider to close gaps in care and improve patient outcomes. Ideally, patient, population, and practice dashboards should be embedded in the EHR for a seamless provider experience. These should include the capability for longitudinal patient care plans, filtering options, and performance summaries. Many population health efforts have failed as a result of providers' dislike of EHRs – particularly when such

efforts require providers to toggle between programs.

• **Centralized and Scalable Coordinated Care:** Increasingly, providers are seeking outside services to provide effective care coordination rather than attempting to build a costly, non–scalable infrastructure. The care coordination team consists of patient care coordinators, usually skilled nurses, who maintain communication between patient and providers and ensure attention to every aspect of care. Hospitalists, the inpatient arm of the care team, are critical to the transition of care, and work collaboratively with providers and patient care coordinators.

• **Reporting Capabilities:** Value-based program contracts contain a 2-dimensional structure of shared savings, indexed by performance and quality. The emerging standard on quality performance is a comparison of key service (patient satisfaction) and clinical quality (process and outcome) metrics to a national percentile standard. In addition to meeting service and quality metrics, providers must demonstrate that overall cost is trending downward. Provider organizations committed to a healthy population must have the ability to track and report patient and population quality metrics, provider/practice performance, and cost trend/differential.

Summary

Providers have a unique opportunity to utilize population health in the wake of market changes coinciding with the

passage of the ACA. The aforementioned population health techniques, along with others, will help them design care systems to achieve the Triple Aim. These new systems often will be built on a FFS medicine foundation and will provide the necessary infrastructure to migrate these same providers to value-based care payment modalities and care delivery models through true practice transformation.

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Mobile Integrated Healthcare Practice

Eric Beck, DO, MPH, EMT-P

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To demonstrate success in our rapidly evolving health care environment, organizations and professionals must assess their existing practices, develop new strategies, and integrate care and services to improve value. The most successful will consider both planned and unplanned care requirements when addressing the health of both individuals and populations.

Envision Healthcare (EVHC) has been pioneering health care delivery for more than 50 years and remains the nation's leading provider of hospital physician services, out-of-hospital and mobile care as well as emergent and non-emergent medical transportation. A stand-alone multiservice organization, EVHC has a clinical footprint in all but 3 states and its more than 34,000 clinicians and caregivers provide more than 20 million patient encounters per year. EVHC subsidiaries include:

• **American Medical Response (AMR):** Provides and manages community-based mobile health care as well as out-of-hospital, emergency medical services and transportation services. This includes emergent and non-emergent transport, inter-facility and critical care, managed transportation services, air ambulance services, and disaster response.

• **EmCare:** Provides integrated physician services to health care facilities including emergency medicine, anesthesiology, hospitalist/inpatient care, radiology/teleradiology, surgery, and other clinical service providers.

• **Evolution Healthcare:** Provides value-oriented, post-acute, in-home, virtual, and innovative care services; leverages the core competencies of EmCare and AMR to provide comprehensive physician-led population management solutions across the continuum (eg, population assessment, transitional care, comprehensive care coordination, telehealth and telemedicine, in-home and mobile care, and longitudinal high risk management.) The strategy is called **Mobile Integrated Healthcare Practice (MIHP).**

The MIHP model focuses on the care and management of complex patient populations at home or other community-based settings. Using unique combinations of resources, clinicians, and touch points, MIHP integrates clinical, logistical, analytical, and educational competencies in a collaborative model that is characterized by patient-centered, team-based population-oriented care, anywhere and at any time. Key features of this innovative model include:

Interprofessional Approach: A physician-led, 24/7/365 interprofessional care team is tailored to the population and individual patient needs. The team may draw upon the expertise of an emergency, hospitalist, primary care, or behavioral health provider, a clinical specialist in transitional care, a pharmacist, a mobile nurse, an in-home therapist (physical therapist/occupational therapist/speech language pathologist), a social worker/community health worker, an emergency medical technician/paramedic, a community health worker, a palliative care team, and virtual clinical support. This interprofessional approach facilitates safer, higher quality, and more cost-effective care (ie, needs-matched care by the most appropriate provider in the most appropriate setting).

Medical Command Centers (MCC): Both a model of care and a clinical practice construct, the MCCs employ a 24/7 population health approach for planned and unplanned care. The MCCs are a network of physical care coordination and communication centers that link traditional 911, nurse advice services, and primary care physician practices with physician-led interprofessional clinical care. This is accomplished by phone, telemedicine, or through consultation with other clinicians to improve the patient experience and health outcomes across the care continuum. Quality data are collected continually and metrics are provided to partners and stakeholders for real-time assessment of clinical effectiveness and calculation of value-based outcomes. In addition to improving access to care for vulnerable populations, the MCC approach can reduce the cost of care for high utilizers of health care (eg,

clinically complex, frail, elderly, mobility-impaired patients) in a meaningful way.

A frontline nurse navigator and nurse manager refer patients, as appropriate, to a needs-matched clinical pharmacist, social worker, advanced practice provider (APP)/ physician assistant, or physician. All services are directed and overseen in real time by a physician in collaboration with an APP, clinical pharmacist, registered nurse (RN), and social worker.

The MCCs differ from "call centers" in that they are interprofessional medical practices that provide 24/7 deployment and resourcing of appropriate services for planned and unplanned care. Clinical triage, medical consultation, and care coordination incorporate principles of shared decision-making and patient choice.

Comprehensive Assessment: The comprehensive clinical assessment (CCA) is an in-home, at-work, or post-acute facility clinical assessment conducted by an APP. CCA is designed to engage patients, capturing relevant information on their disease burden and psychosocial issues as well as their health status. The assessments are used to identify modifiable factors (eg, gaps in care) and include clinical services such as medication therapy management, immunization, diagnostic specimen collection, and testing. This initial touch point assists clinicians in stratifying individual patient risk and promotes overall patient activation – a critical outcome.

The CCA targets Healthcare Effectiveness Data and Information Set, Medicare STAR, and Accountable Care Organization quality outcomes by identifying and delivering gap-closing care on-site in real time.

Transitional Care: A "transitionalist" team focuses on improving care transitions by assessing, managing, and providing support for psychosocial and clinical risk factors. Transitionalist teams excel in needs-matching, patient education, information sharing and handoff communication with other stakeholders in care. Built on evidence-based Naylor and Coleman models[1] (that utilize a mobile, 24/7, top-licensure care, interprofessional team design) EVHC's transitional care model has demonstrated meaningful reductions in hospital readmissions.

Longitudinal High Risk: There is wide variability in the quality of care for the high-risk patient population that generates the largest percentage of health care costs. To effectively address this issue, a physician or other member of the interprofessional team conducts monthly in-home/at work visits for vulnerable patients, providing comanagement in coordination with the primary care providers, health plan case managers, and/or specialists for medically complex, highest-risk, highest-cost, and highest-touch patients. The program includes 24/7 telephonic support from the MCC's interprofessional team. These interventions target self-management of

chronic disease and seek to minimize exacerbations, reduce hospital admissions, and decrease preventable emergency department and 911 utilization. The longitudinal high-risk model closes currently unaddressed gaps (eg, access to transportation, declining functional status, community support, safe independence at home), thereby improving quality and cost outcomes.

Advanced Illness Management: Respectful coaching and care is provided for patients with advanced chronic illnesses and functional decline (eg, advanced stage congestive heart failure) with a focus on managing symptoms and medication, providing comfort, coordinating care, planning for the future, and improving quality of life. This holistic approach includes the patient's family and caregiver(s).

Unplanned Care: Effective population health requires both planned and unplanned care, as even engaged patients with well-managed chronic diseases will occasionally need additional support. A key differentiator of the MIHP model, the MCC is exceptionally well suited to providing unplanned care. The MCC coordinates unscheduled care needs using mobile clinicians and telemedicine capabilities with all services delivered by physicians in collaboration with APPs, clinical pharmacists, paramedics, RNs, and social workers.

All health care is prevention –

- Primary: stopping illness or injury before it happens (eg, immunizations)

- Secondary: stopping the progression of disease-induced deterioration (eg, diagnosing and treating hypertension)

- Tertiary: returning a patient to a status of maximum usefulness with a minimum recurrence of the disorder (eg, avoiding re-hospitalization)

- Quaternary prevention employs methods to mitigate or avoid

results from unnecessary, duplicative, or excessive interventions in the health system, thereby lowering the total health care spend and improving patient experience and engagement.

Complex, high-risk patients require 30-90 days of engagement to improve transitional and post-acute care outcomes and reduce utilization. With its innovative model that targets this population, MIHP seeks to fill a quality gap and begin to bend the cost curve.

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The Windmills of My Mind
Marcia Guida James, MS, MBA, CPC

In today's challenging health care environment, there are some tenets on which stakeholders around the table agree and others on which we continue to disagree. In general, we agree on the following:

- Something must change in order to reduce costs and raise the quality of care.
- To a certain degree, this change is happening.
- For the most part, payers and providers are on board.

However, disagreement typically persists on:

- The optimal type of reimbursement according to need and geography
- The right metrics
- The right focus – commercial payers, Medicare, or both

- Best practices
- Policy in general

Increasingly, both payers and providers must deal with these challenges and, unfortunately, as pushbacks happen, walls go up in response.

Payers must contend with an overwhelming number of stakeholder expectations — such as demonstrating consistently positive profit margins, continued growth with year-over-year enrollment increases, quality improvement while lowering costs as Affordable Care Act requirements are implemented — all in an unsettled environment where many network providers are wary of or resistant to change.

Providers must deal and comply with a plethora of reimbursement

and policy structure changes set forth by the federal government — the Physician Quality Reporting System, Meaningful Use, the Value Based modifier, bundled payments, demonstrations such as the Comprehensive Primary Care Initiative, and the Medicare Shared Savings Program to name a few.

On the private payer side, providers are evaluated on an endless array of additional quality, utilization, and cost metrics that differ among payers in the absence of an industry-wide consensus on metrics. In addition, providers face cost and utilization stressors, administrative burdens brought on by various shared savings programs, and the operational challenges associated with the rising cost of doing business, staff turnover, automation paralysis, and career

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pathway decisions. And, despite inroads being made by payers in their attempts to share resources with providers in process-oriented activity, there is little large-scale change taking place.

Yet, the winds of change continue to blow...in increasing regulatory requirements: demands for increased transparency (eg, Medicare's Physician Compare), payer rating systems, and even online consumer ratings (eg, Yelp). Everyone wants to help, but no one seems to know how to change the way health care is actually delivered and reimbursed.

Last, but hardly least, providers face what must seem to be insurmountable challenges associated with health information technology and the lack of interoperable systems. Do we also need to ask them to read the *Federal Register* to get all the information they need?

Let's get back to basics by defining what is actually needed with some good starting points. First, physician providers need to think smarter, become leaner, and create more efficiencies in their practices. One of the best and most obvious starting points is empowering the frontline staff. Physicians may not realize what a valuable resource their frontline staff can be in improving efficiency and becoming more patient-focused. Beginning with small steps, staff can help physicians think more clearly about their practice operations, get more work done in a day, and have more satisfied patients. The frontline staff also may consider redefining and repackaging themselves to further improve efficiency and staff satisfaction. The bottom line is that frontline staff should be given a voice.

Health plan payers can do their part by making real efforts to educate the physician providers in their networks. For example, they can communicate on a regular basis about anticipated regulatory changes that affect physician practice. These efforts must go beyond sending a monthly provider newsletter. Additionally, health plans can better partner with practices to help them meet the challenges — particularly smaller practices that lack sufficient resources. By listening to one another's needs, collapsing the walls, and working together more smartly and collaboratively, payers and providers can create change from within and without.

When the winds of change blow, some people build walls — others build windmills. Little by little, when we stop building walls, we can focus on building windmills.

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The Innovation Conundrum: Practical Strategies for Transforming Health Care
Prathibha Varkey MD, MPH, MHPE, MBA

With a predicted 20% increase in ambulatory patient volume over the coming decade, an intensified focus on consumerism in health care, and a growing number of non–health care industries participating in health care delivery reform, US health care organizations are under tremendous pressure. To remain competitive in this new environment, organizations must give serious consideration to 3 vital areas:

- Institutional reorganization to meet health care reform.

- Collaboration for innovation.

- Caring for health care providers in the midst of change.

Institutional Reorganization

Unlike other service industries, US health care organizations are not optimally designed to meet standards for quality (ie, efficiency, effectiveness, reliability, affordability) or safety. Even as

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they work diligently to improve operational issues related to quality and safety, our traditional, hospital-oriented health care system is changing rapidly. In particular, we have recognized that comprehensive ambulatory care (including population based) and retail strategies are critical to engaging consumers across the continuum of health care. In this evolving consumer-driven market, brand, access, cost, information technology connectivity, consistent quality, access, and location become increasingly important as competitive advantages to health care systems.

Are our operations leaders well positioned to drive the necessary innovation to meet the needs of this consumer-driven market? Do they have the skills, time, and resources to enhance operations while simultaneously introducing innovation?

I suggest that innovation and quality/operations are 2 distinct but key puzzle pieces necessary for health care reform. Successful systems will invest in both. To provide sufficient impetus

and leverage for both key functions, senior leaders must work collaboratively and report regularly to the organization's key executive leadership.

Collaboration for Innovation

A major barrier to innovation within traditional health care systems is the speed of execution. There is a dearth of service delivery and business model innovations in the health care sector. Collaboration with non–health care systems that have the capacity and skills to innovate rapidly — and fail frequently — is essential.

Prevention and wellness are critical considerations with regard to population health innovations. How do we capitalize on and collaborate with industries that have successfully and efficiently engaged our customers (eg, wearable health monitors, healthy foods, physical activity motivation)? What can we learn from other industries that have mastered mass customization as we grapple with diversity in delivering patient-centered care while practicing evidence-based medicine?

Taking Care of Health Care Providers in the Midst of Change

With the onset of much-needed health care reform, our institutions and clinician providers are under extraordinary pressure. The pace of change, the sheer number of changes occurring as the system strives to optimize operations, and the increasing focus on the bottom line for survival — all of these contribute to the high level of stress. Between one third and one half of US providers are burned out. As leaders, how do we take care of our providers and guide them through this tremendous change? Will uncertainty about health care and burnout among mentors dissuade students from entering the health care field? These critical questions are integral to health care reform and the pace at which change is implemented.

A Theoretical Construct

Creating sustainable impact is vital to health care reform. Described by Ferdows and De Meyer in the manufacturing literature, the Sand Cone theory[1] suggests that lasting improvements are achieved by means of a studied sequence in capabilities. I believe this theory can be applied in the health care industry. To build a sustainable sand cone, the base must be continually widened to support the increasing height. It follows that a precondition is to build a first layer of improvement by enhancing quality. Once operations have reached a certain acceptable quality standard, the organization builds internal dependability or reliability,

Figure 1. Sandcone Theory Applied to Health Care
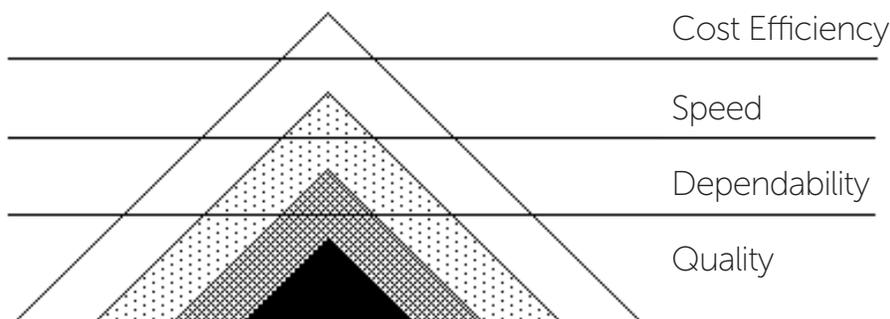
Cost Efficiency

Speed

Dependability

Quality

Ferdows K, De Meyer A. Lasting improvements in manufacturing performance: in search of a new theory. *Journal of Operations Management.* 1990;9:175. Reprinted with permission.

enhances speed or efficiency of processes and, finally, addresses the cost of the sand cone.

As organizations focus on health care reform, leaders must provide the due diligence to ensure that every patient receives consistent, reliable quality of care as they tackle much needed reimbursement reform.

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