Commentary: An Unlikely “Key” to Creating Value in Health Care

Robert J. Laskowski, MD, MBA
President and CEO of the Christiana Care Health System and Founder of the Christiana Care Value Institute

In an effort to stimulate health care outcomes research that is guided by “the voice of the people,” the Affordable Care Act (ACA) established the Patient-Centered Outcomes Research Institute to fund and oversee research that supports consumers in making informed decisions about their health care. Such patient-centric orientation is critical to assuring that comparative effectiveness research is conducted with the public’s best interests in mind. The implication for those of us who design, deliver, and finance health care is that the public we serve must be central to everything we do.

It follows that the first step—and the often overlooked “key”—is simply to listen.

Irrespective of the backlash following the Supreme Court’s decision to uphold health reform, and regardless of the person occupying the White House, the ACA has helped focus the nation’s attention on health care, its unprecedented cost, and its value to us as citizens.

When it comes to health care, what a patient “feels” is just as important as the “facts.” To improve quality and safety and reduce costs, health care leaders must begin to listen to and understand the patient communities they serve. The public’s perception of value in health care encompasses their fears, their biases, and their interpretations of personal experiences. The health economist’s definition of value (ie, quality divided by cost) does not resonate with individuals making decisions regarding their health.

We need not look far for evidence that listening to the public is crucial. In the wake of an attempt to control costs in the 1990s, the letters “HMO” (health maintenance organization) became synonymous with bureaucracy and the denial of care. In essence, health care leaders told people that they did not need care without asking them what care they thought they needed. The “gatekeeper” concept was one that offered incentives for reducing operational costs and guarded access to services that people wanted and felt they needed. As payers and sponsors of health insurance plans, companies and government agencies were the de facto “customers” of HMOs rather than the employees. The results were dramatic; although health care costs declined, the HMO system imploded under the pressure of public outrage.

Many of the administrative decisions made in the HMO were reasonable when viewed through the lens of clinical indications and resource utilization. The underappreciated element was the fundamentally important role of individuals in determining what is (or is not) “valuable” to them and their families, an oversight that proved fatal to the sustainability of the HMO approach.

Choice is highly valued in American society, and a gatekeeper system is construed as one that denies or constrains personal choice. Choice enters into the continuing controversy over health insurance coverage “mandates” in a different but equally unpopular way. Because legislators failed to recognize the great importance most citizens place on choice when crafting its approach to necessary health reforms, the public’s overall view of the ACA is distorted.

The clear signal to policy makers and industry leaders is to understand what the public values before making changes to health care. The concept of value must be inclusive, nuanced, and fundamentally patient-centered. For medical professionals, value is making a measurable difference in people’s lives through what we do in ways that they appreciate and that our society can afford.

Any textbook on the subject will tell us that value embodies quality, safety, cost, accessibility, affordability, and efficiency, but practically speaking, patients’ perceptions feature prominently in the definition of value. For a patient, health care value is a function of what he or she

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Corresponding Author:
Janice L. Clarke, Jefferson School of Population Health, 1015 Walnut Street, Suite 115, Philadelphia, PA 19102, USA
Email: janice.clarke@jefferson.edu
believes rather than what health professionals think. In this context, “value” is a verb with the patient as the subject and health care as the object. When this basic truth is overlooked, health care policy makers and providers risk alienating the very people they wish to serve.

To understand what people value, we must ask them—not once, but often over the course of our relationship with them. Listening should always come first. Once we learn what people fear, hope for, understand, or misunderstand, we can comfort, guide, and teach as well as prescribe and treat. Health care systems designed based on listening to the public are much more likely to serve effectively and in a way that lasts.

Introduction

Health care in America is undergoing radical and permanent change. On April 30, 2012, Christiana Care Health System’s Value Institute partnered with the Delaware Public Policy Institute to hold a Value Symposium. More than 200 health care experts from leading institutions and organizations came together to discuss how returning to the “basics” of medicine—listening to the patient, using resources wisely, and emphasizing quality and safety—can transform patient care and deliver greater value for the community served by a health system. Proceedings of the symposium follow.

Special Guest Presentation

Christopher Coons
US Senator, State of Delaware

Today’s physicians are so highly educated and skilled at the science of health care that they find it hard to remember how it feels to be a patient—to be sick, frightened, and confused.

Patients love their nurses, trust their doctors, and have faith in the power of cutting-edge technologies and seemingly miraculous medicines. Patients are also taxpayers, and they have a markedly different relationship with their senators. Senators are responsible for finding the resources to pay for what patients want—and, overwhelmingly, patients want no health care treatment or service to be denied them at any time. Simply put, they do not want a “gatekeeper.”

The last serious national attempt to control health care costs was the health maintenance organization (HMO) movement. In the minds of many Americans, the HMO has been replaced by the US Congress in the form of the Patient Protection and Affordable Care Act (ACA). The ACA is viewed as a new gatekeeper mechanism for denying desired products and services.

Nonetheless, if Congress fails to deal with escalating health care costs in a proactive way, “the trend lines will sink the United States.” Dozens of Republicans and Democrats in Congress have been meeting privately and all agree that, without major reform, the United States will be headed in the same direction as Greece. Technically, the nation of Greece has become the ward of Germany.

The problem faced by Greece is one of mathematics. The problem faced by the United States is one of leadership. More than a decade ago, Mehmet C. Oz, MD, a well-respected cardiologist and television personality, delivered a bracing talk on the nation’s health care problems and the unpopular but potentially necessary remedies of cost cutting and tax increases. He stressed the importance of restructuring the way we recognize and reward health care professionals.

No longer willing to accept that physicians and nurses know best when it comes to their health, today’s patients have alternate views based on information derived from their own research on the Internet and in the media.

Understanding of the issues is at an all-time high in the health care industry and in Congress. We need to rein in health care costs in a responsible way—“rational rationing”—and the public must be helped to understand and accept this reality.

The ACA has wrought fundamental changes—not in how care is provided but in access to health care for those who thought they had it. The most ardent advocates of health care reform are those who had insurance coverage but, when faced with a catastrophic event or preexisting condition, were denied care or offered drastically reduced care by their insurers. Sadly, it is only when we come across the cold spots in the pond that we become advocates for change.

ACA ensures funding for predictable events for certain demographic groups; for instance, rational financing for care of seniors in the home setting. A cutting-edge demonstration posited that health care provided for seniors in their homes is both compassionate and cost-effective. When this concept is presented to an audience, heads nod. Many of us know seniors who have struggled heroically against being sent to a nursing home.

One of the biggest gaps in perception concerns waste and medical malpractice. It may be that the biggest elephant (or donkey) in the room is end-of-life care. There is a Native American saying, “You haven’t lived a good life until you’ve had a good death.” How many of us have experienced or heard powerful and painful stories about medical interventions delivered in the last weeks of a person’s life that are, on some level, intrusive, destructive, and disrespectful?

In tribal areas of Kenya, elders decide when it is time for them to die and send word to their extended families. After family members travel for a week or more to meet
at the elder’s hut, the elder dies in peace and dignity. Contrast this with the high-tech, impersonal setting in which many of our elders end their lives.

The fact is that hundreds of thousands of dollars are spent on care that is delivered needlessly—and, in many cases, against the wishes of the patient—because there was never a timely conversation about end-of-life care. We need to relearn what we have forgotten about life and death. We must use our insights as well as our skills to deliver true value. “Doctors aren’t God. Senators aren’t God. The real challenge is to let God be God.”

Ensuring Value for Patients in a Cost-Conscious World

Virginia Hood, MBBS, MPH, MACP
Professor of Medicine at the University of Vermont and Immediate Past President of the American College of Physicians

Overriding Issues in US Health Care

Physicians have always wanted to do only what is best for their patients, but when we began to measure what we were doing, we were chagrined to discover that we were not doing as good a job as we had thought. In the decade beginning in the year 2000, the chief issue was improving the quality and safety of health care, and health care organizations across the country have made a great deal of progress on that front.

The issue of the next decade—2010 through 2020—is, and will remain, decreasing the exorbitant cost of health care. Without question, the rising cost of health care as a percentage of US gross domestic product (GDP; from 6% [$330 billion] in 1965 to a projected 20% [$4 trillion] in 2015) is unsustainable.\textsuperscript{1} As shown in Figure 1, federal programs (Medicare and Medicaid) account for approximately 40% of current total expenditures. The majority of spending—and a disproportionate amount of the projected increase—is in the private sector.

A comparison of 24 countries’ expenditures on health care (2008) revealed that, although government spending is similar to that of other industrialized countries, the United States has more access problems related to the lack of universal coverage, and poorer outcomes.\textsuperscript{2} In its comparison study of health care spending in the United States, Switzerland, Canada, Sweden, and the United Kingdom, the Kaiser Foundation observed that US health care spending as a percentage of GDP is twice that of the other countries. Remarkably, the percentages across all 5 countries were similar a mere 30 years ago.

Why is spending disproportionately higher in the United States?

Cost Drivers in US Health Care

Not surprisingly, technology is an insidious cost driver. Without benefit of a coordinated policy on health technology assessment, low-value innovations and medications are adopted at the same rate as those with high value. The United States has 54% more computerized tomography scanners and 40% more magnetic resonance imaging units than any other country, with the exception of Japan. The higher costs associated with such excess capacity add $40 billion to the US annual health care bill.

Although chronic disease and the aging population are and will continue to be key cost drivers, the costs associated with chronic illness are escalating apart from the costs of aging.

A third factor is excessive pricing. Not only do Americans use many more health care products (eg, prescription drugs) and services (eg, specialist physicians)
but the products and services are priced much higher in the United States than in other countries. Statistics show that 60% of the US population use 1 prescription drug and 25% use 4 or more prescription drugs.

Costs also are driven by the relative scarcity of primary care services in the United States, where primary care is undervalued and free markets have failed to raise prices for these services. In countries where primary care is readily available, more preventive services are provided, more complications are averted or delayed, and the overall costs of health care tend to be lower.

In the United States, liability does contribute to unnecessary health care costs. It is estimated that tort reform could save $62 billion per year. Although this is less than 3% of total health care expenditures, it is an area that must be addressed.

Without question, overuse and misuse (eg, treating to the test) are our biggest culprits, contributing $200 to $700 billion per year to health care spending.

**Physician Responsibility for Conserving Resources**

Why should physicians be held accountable for conserving health care resources? The main reason is that physicians influence more than 80% of health care costs, so they are responsible for making sure that what they prescribe is safe, effective, and cost-effective. Moreover, the public trusts doctors to recommend cost reduction changes more than it trusts the government, employers, or private insurers.

*The American College of Physicians (ACP) Ethics Manual: Sixth Edition* states, *Physicians have a responsibility to practice effective and efficient health care and to use health care resources responsibly. Parsimonious care that utilizes the most efficient means to effectively diagnose a condition and treat a patient respects the need to use resources wisely and to help ensure that resources are equitably available.*

The term *parsimonious* is often misconstrued as meaning miserly or ungenerous. In this context, however, it refers to using resources wisely and making them equitably available to all patients.

Another publication, *Medical Professionalism in the New Millennium: A Physician Charter*, adds further clarity:

> While meeting the needs of individual patients, physicians are required to provide health care that is based on the wise and cost-effective management of limited clinical resources. The physician’s professional responsibility for appropriate allocation of resources requires scrupulous avoidance of superfluous tests and procedures. The provision of unnecessary services not only exposes one’s patients to avoidable harm and expense but also diminishes the resources available for others.*

Uncomfortable as it is to acknowledge and accept, physicians are a driving force behind excessive health care costs. Preventable and/or avoidable hospital admissions and readmissions, inappropriate and/or unbeneﬁcial treatments, and inappropriate diagnostic testing are prime examples. Overused or misused diagnostic testing alone is estimated to cost approximately $210 billion per year (10% of total...
annual health care costs). Another indication of physician-driven overuse is the steep increase in the number of diagnostic tests and physician services per capita provided to Medicare beneficiaries from 2000 to 2009 (Figure 2). Note that the percentage of imaging studies far exceeds the percentage of physician visits or major procedures.

There are a number of reasons why health care professionals overuse and misuse diagnostic tests. First and foremost, there are insufficient guidelines; even when guidelines are available, they are not always followed. Next, there is a deplorable lack of comparative effectiveness research (CER) that can inform whether one treatment is better than another for patients with similar clinical conditions and individual attributes.

Another often cited reason is that patients expect—even demand—that tests be done. Indeed, patients are exposed to pharmaceutical advertising, medical reports in the media, and health-related sites on the Internet an average of 16 hours per year. In contrast, they spend an average of 4 hours or less per year with their physicians. Because today’s patients have more “information,” they need help from their physicians to process it.

Force of habit is another reason to overuse and misuse tests. If we’re used to ordering the same battery of tests, we seldom take time to consider whether all the tests are really necessary.

Last, overuse and misuse can stem from a pursuit of personal gain: Apart from fraud and abuse, there are considerable financial incentives for doing more tests than may be necessary—not the least of which is ordering tests to avoid spending additional time with patients.

The “battle for the soul of American medicine” is over “whether the doctor is set up to meet the needs of the patient, first and foremost, or to maximize revenue.”

The essence of the ACP’s statement is 2-fold: (a) we must ensure that our systems do not encourage overuse and misuse and (b) we must recognize the fact that we cannot solve the problem on our own; rather, we must work in cooperation with patient and society as a whole. To those ends, the ACP introduced its High-Value, Cost-Conscious Care Initiative (HVCCC) targeting 3 areas:

1. Develop guidance for physicians about appropriate use of care, focusing initially on diagnostic testing (eg, diagnostic tests for low back pain that are not beneficial for understanding or quality of life)
2. Establish a national initiative—a multistakeholder effort to reduce marginal and ineffective care and promote high-value care
3. Educate all target audiences (ie, practicing clinicians, residents, medical students, patients) about areas of overuse and misuse of care

Progress has been made since the announcement of the HVCCC. Beginning in February 2011, a series of articles was launched in the Annals of Internal Medicine. The first article issued guidance in the form of concepts for clinicians to evaluate the benefits, harms, and costs of medical interventions. The article defined value, pointed out distinctions between efficacy (ie, controlled studies with homogeneous subjects) and effectiveness (ie, impact of interventions under real-world conditions), explained CER, and presented cost-effective analysis (ie, comparing benefits and costs of 2 strategies) as an appropriate option for population studies. A key message was that not all low-cost tests are of high value, and vice versa (Figure 3).

A subsequent article on diagnostic imaging for uncomplicated low back pain concluded that such tests have no benefit in terms of pain reduction, improved function, quality of life, or understanding of the cause of symptoms. The tests do expose the patient to risk of harm from increased levels of radiation and false-positive results. A third article on the appropriate use of screening and diagnostic tests to foster high-value, cost-conscious care identified 37 clinical situations in which a screening or diagnostic test does not reflect high-value care.

Reducing Inappropriate or Noneffective Treatments, and Promoting High-Value Treatments

Surveys suggest that physicians follow treatment guidelines that are relevant to their patients less than half the
time, thereby risking underuse of effective treatments or overuse of ineffective ones.9 Going forward, it is vital that we encourage physicians to follow treatment guidelines, that we promote CER, and that we adopt payment and delivery systems as well as drugs and procedures that demonstrate value.

The Patient-Centered Medical Home (PCMH) is a prime example of a system in which appropriate care is rendered by appropriate providers. The concept includes a personal physician in a team-based practice, a holistic orientation, coordinated care across multiple care settings, an emphasis on quality and safety, and enhanced patient access to care. Importantly, the PCMH is supported by a payment structure that recognizes services and value rather than volume alone.

Early outcomes of PCMH efforts are mixed, but in general, they have shown reductions in emergency department visits, fewer hospitalizations, lower health care costs, improved staff satisfaction, and improved quality of both preventive and maintenance (chronic illness) care. We must work to counter the unfortunate misperception about “rationing.” We are working toward “rational care” as opposed to “rationing.” Rational care is medically and economically sound care that strives to avoid the need for rationing. Rationing decisions that focus on the allocation of scarce medical resources and who receives them lead to underuse of potentially appropriate care. Rational care focuses on assuring that care is clinically effective, thus avoiding overuse and misuse of care.

**Educating All Stakeholders About High-Value, Cost-Conscious Care**

In addition to the scholarly articles referenced previously, the ACP has developed educational programs, medical training, and education (eg, the Medical Knowledge Self-Assessment Program tests) that take into account knowledge of value. Cost-consciousness is being brought into the training environment by means of case-based curricula developed by the ACP and the Alliance for Academic Internal Medicine.10 Because habits are formed early in training, the focus must be on students, residents, and fellows and on the most inappropriately used services (ie, diagnostic tests).11 Instilling value-based care requires the following:

- Knowledge—knowing what helps versus what harms
- Attitude change—focus on appropriate care rather than cost
- Culture change—recognizing that more is not necessarily better
- Faculty development—trainees mimic their faculty role models
- Regulation—cost-consciousness as part of resident competency requirements

Patients must become our partners in these efforts. They can be our best allies. A fascinating article in the *Journal of the American Medical Association* (December 2011) described in some detail what patients want from health care. Predictably, they want timeliness, kindness, hope, certainty, choice, care coordination, and shared decision making, and they do not want inconvenience, discomfort, pain, and harm. They prefer medications and surgery to changing their behavior. They are less interested in evidence, equity, or conflicts of interest if these do not affect them in terms of out-of-pocket costs.

Clearly, patients need education if they are to be effective partners in attaining HVCCC. Patient education is being undertaken by the ACP and the ACP Foundation (eg, summaries for patients in *Annals of Internal Medicine*, ACP Foundation’s HEALTH TIPS). Articles appear frequently in the lay press12 and collaborations with consumer groups have yielded valuable information and materials.13

The National Physicians Alliance’s “Top 5” Campaign (2011) identified and published the top diagnostic tests that have little value and should not be ordered: (a) imaging for low back pain, (b) blood panels and urinalysis screening for healthy adults, (c) electrocardiograms for low-risk, asymptomatic patients, (d) cholesterol-lowering drugs other than generic statins, and (e) bone density scans in women younger than age 65 or men younger than age 70 without risk factors.

The ABIM Foundation and a number of professional societies and organizations have partnered in the Choosing Wisely program. Under the auspices of this program, the ACP has developed recommendations concerning tests and studies that may not be necessary or in the patient’s best interest; for example, exercise stress tests for low cardiac risk individuals, brain imaging studies for simple syncope with negative neurological examination, and preoperative chest radiography in the absence of clinical suspicion of intrathoracic pathology.

In April of 2012, the ACP partnered with Consumer Reports to launch a patient education effort. The first installment is directed at helping patients understand what is effective in treating diabetes.13

**Challenges to Achieving High-Value, Cost-Conscious Care**

Despite the good efforts described herein, challenges remain. One of the toughest challenges is how to promote high-value care at the end of life, another area in which costs are escalating. Health care expenditures for Medicare recipients are 5 times higher in the last year than any other...
year of a beneficiary’s life and 70% is spent in the last 6 months. Other issues include physician financial conflict of interest; the practice of defensive medicine; overpricing and price transparency; patients’ knowledge, attitudes, beliefs, and acceptance of responsibility for decreasing the costs and burdens of their illnesses; and payer control over testing and treatment.

In summary, stewardship of resources is a responsibility shared by everyone.

**Why?** To combat unsustainable costs and eliminate unnecessary care that is neither safe nor effective.

**Who?** Physicians, individually and as a profession, are responsible for leading this effort in partnership with informed patients.

**What?** Make judicious choices among clinically effective alternatives and avoid overuse and misuse.

**How?** By acquiring evidence, educating all 6 “P”s (Physicians, Patients, Public, Policy makers, and Payers), and engaging society in an open, honest discussion about how to conserve and allocate health care resources based on value.

**Lessons from Massachusetts—Population Health Management**

**Peter L. Slavin, MD**
President, Massachusetts General Hospital, and Professor of Health Care Policy at Harvard Medical School

**Health Care Reform in Massachusetts**

“The People’s Republic of Massachusetts” is a little ahead of the rest of the United States in terms of health care reform. The first of several pieces of legislation that have been passed in recent years, Chapter 58 of the Acts of 2006, focused on expanding health insurance coverage by issuing an individual mandate and by creating “connectors” (ie, health insurance exchanges) as well as the establishment of a Health Care Quality and Cost Commission.

Two subsequent pieces of legislation further addressed health care cost issues. Chapter 305 of the Acts of 2008 focused on cost containment and increased transparency by increasing reporting (eg, cost trend hearings, a State Attorney General report) and establishing a Payment Reform Commission. Chapter 288 of the Acts of 2010 delved into small business relief by limiting tiered networks and establishing a Price Reform Commission.

Sometime in 2012, further payment reform legislation is expected to gradually eliminate fee-for-service payments in Medical Assistance, an action that likely will cause unrest in the provider community.

These legislative changes have dramatically increased residents’ access to health care in Massachusetts. The overall uninsured rate dropped from 6.4% in 2006 to 1.9% in 2010, and the number of people without health insurance coverage plummeted from 395,000 to 120,000—a decrease of nearly 70%.

Questions arise about how Massachusetts health reform was financed and whether the changes caused a rise in overall costs. Yes, costs rose—but at a slower rate than in the rest of the United States. The 4 revenue sources that financed reform were the following:

1. New “individual mandate” payments for private insurance
2. $50 million in employer assessments
3. $125 million from state general revenue allocated to health (not to tax cuts)
4. $180 million additional federal match for Medicaid expansions and rate increases

In addition, the State had access to preexisting funds ($680 million) in its Uncompensated Care Pool. These funds were substantially redirected from hospital payments to insurance subsidies. Because of this, there was relatively little impact on the state budget.

The growth in state health care costs has been reduced in various ways. In 2009, the Payment Reform Commission called for a migration toward a global payment system. Cost trend hearings in 2010 and 2011 concluded that prices were driving cost growth and variations in payments for the same service or procedure across the state were an issue. Recently, the Provider Price Reform Commission determined that such variations were unjustified and called for a market intervention. The Governor has continued to generate pressure by filing legislation calling for migration away from fee for service and by pursuing aggressive regulation of small business premiums.

Proof of success is in the outcomes. In Massachusetts, 98% of residents have health insurance coverage (83% nationally). Contrary to what was feared, 77% of employers offer health insurance (69% nationally). Spending is in line with expectations (only 1.4% of the state’s $32 billion budget in 2011) given that the cost of living is higher in Massachusetts than the average for the country. Massachusetts residents are more likely to have a primary care visit (up by 5 percentage points) and less likely to use an emergency department (down by 4 percentage points).

In theory, federal health reform builds on the success of Massachusetts. The design components are almost
identical (Table 1). So it is interesting that, although 66% of Massachusetts residents are satisfied with the state plan, the federal plan is very unpopular. There are several possible reasons for this. First, the national political constituency is far more fragile, making it far more difficult to work out any issues. Second, there is no national “free care pool” and no consensus among businesses and the public as there was in Massachusetts.

Population Health Management: Massachusetts General Hospital (MGH)/Partners HealthCare (Partners) Experience

Rising health care costs have been squeezing employers for years and have absorbed a large portion of increases in employee compensation.\(^{19}\) If this trend continues and we fail to respond thoughtfully and “trim the fat” in health care, governments will be forced to “cut the muscle” of other high-value programs in their budgets.

Politicians must address tough questions about limited resources. How many teachers are you willing to fire in order to have 78-year-olds have a procedure which will be invented 5 years from now that adds 4 months to their life? That sounds terrible, but infinitely choosing those things will shift you away from education for the young and toward infinite invention of such [medical] procedures.\(^{20}\)

Abandoning their traditional rivalry, MGH teamed with Brigham and Women’s Hospital to form Partners in 1994. The largest employer in Massachusetts, Partners currently includes several community hospitals, a psychiatric hospital, 4 rehabilitation hospitals, 2 skilled nursing facilities, a home health agency, a large primary care physician network, and a number of community health centers.

The diagram in Figure 4 depicts Partners’ view of the world. There are 2 lines of business: population management and referral management. Population management accounts for almost 40% of Partners revenue; 62% of Partners revenue comes from non-Partners patients. The strategy is to manage costs in both lines of business, negotiate contracts that reward efficiency, and focus internally on improving quality and efficiency.

The population health management business improves the value of care by providing high-quality, cost-effective longitudinal care for a defined set of patients. The referral business effectively and efficiently cares for patients seen by Partners specialists for a defined episode of care. In these ways, Partners actively manages down utilization and encourages loyalty from its referral network.

Bending the Cost Curve

Partners’ reputation is built on tackling the biggest health care problems and influencing trends. The biggest threat we face today is the cost of care itself. There is an excellent opportunity to provide leadership in bending the cost curve in a way that makes health care better and more affordable.

Partners aggressively pursues global payments for population management for a number of reasons. From a business perspective, it is the lesser of 2 evils. With continued fee for service with endless rate cuts, the outlook is bleak. Global payments—wherein care is redesigned, utilization is decreased, savings are shared, and more capacity is created—are preferable. Partners increased its ability to care for populations of patients by universal adoption of electronic health records and by mounting a successful Centers for Medicare and Medicaid Services (CMS) demonstration project.

In 2006, CMS selected MGH to participate in a 3-year demonstration project focusing on a high-risk subset of Medicare patients: 2500 of the sickest patients, on an average of 12.6 medications, with an average of 3.4 hospitalizations per year, at an average annual cost more than $24 000.

These 2500 patients were followed by the MGH Care Management Program, an initiative designed around 12 care managers embedded in primary care practices who coordinated care, identified patients at risk for poor outcomes, and facilitated communication among caregivers. Supported by health information technology (eg, electronic health records, tracking, home monitoring), care managers formed close relationships with patients and their families and worked closely with physicians. The payment model was similar to the proposed shared

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savings (ie, at risk financially if unsuccessful) for Accountable Care Organizations (ACOs).

Results from an independent evaluator revealed a high rate of enrollment (ie, 87% of eligible Medicare beneficiaries compared with a rate of 50%, which is considered excellent by private insurers), appropriately targeted interventions, improved communication between patients and the health care team, and high rates of patient and physician satisfaction.

Clinical outcomes were uniformly positive with hospitalization rates for enrollees 20% lower than the comparison group, emergency room use 25% lower for enrolled patients, and annual mortality rates less than the comparison group (16% vs 20%). Financial outcomes were encouraging as well: a 7.1% net savings for enrolled patients (which translates to a potential $2.65 billion savings for Medicare); an approximate 4% annual savings was realized for the total population; and for every $1 spent, the program saved at least $2.65. Over a 6-year period, total savings were projected to be 12%.

The program was very well received and evaluated by physicians and patients alike and, subsequently, the program was expanded. An alternate quality contract was executed with BlueCross BlueShield, and a new relationship was forged with Tufts Health Plan. Today, the program has evolved into a Pioneer ACO.

Among current initiatives is a considerable body of work on evidence-based care improvement tactics by Timothy G. Ferris, MD, MPH, Medical Director of the Massachusetts General Physicians Organization. A variance reporting program comparing utilization of overused/misused diagnostic tests by provider led to a shift in the use of high-cost imaging and a 25% reduction in utilization. Although such programs may reduce revenue in the short term, we do not want to finance the organization by providing unnecessary care.

MGH is in the process of developing a “3-layer-cake” incentive structure wherein trends (eg, per member per month expenses) are managed via contract terms, revenues allocated within Partners are based on performance, and a compensation framework is built for individual providers (ie, changes in faculty practice plans; Figure 5).

In summary, the key ingredients for success in population management are the following:

- Infrastructure—human and tangible resources
- Incentives—some but not excessive
- Leadership at all levels of the organization
- Recognition that population management is important for society as a whole
Educating the Health Care Workforce of the Future: Quality and Safety Agenda

David B. Nash, MD, MBA
Dean, Jefferson School of Population Health

All the important initiatives described in the previous presentations cannot succeed without leadership. Changing the culture of clinical training will be difficult and will take a long time. The first challenge will be to train a cadre of physician leaders for the future with an emphasis on health care quality and patient safety. To create value in the system, we must continue to move from paying for performance (e.g., ordering the appropriate test) to paying for outcomes (e.g., using the test for successful management of the patient’s condition).

Background

We do more things to more patients with greater intensity than any other nation in the world. Ten years ago, I was the beneficiary of a new technology—spinal fusion surgery. At the time, there was not a single piece of scientific evidence that this was the most appropriate approach for severe sciatica. It was not until 3 years later that the first spinal outcomes research trial report was published in the New England Journal of Medicine.

The problem with this rapid spread of new technologies is that, although our society may benefit from the technologies, it does so without evidence in a data-free environment. With the high level of uncertainty, the technological imperative, and the drive to create new tools, training physician leaders for the future is going to be difficult.

The only enterprise of its kind in the world, the Pennsylvania Health Care Cost Containment Council has been collecting provider-specific data on utilization and quality for years. Its annual reports reveal unsettling information; for example, data pertaining to total hip and knee replacement surgeries show massive unexplained clinical variation, with dramatic differences in average length of stay, return to operating room, and patient satisfaction. Costs vary by a factor of 4 to 5 across the state. On a national level, the Dartmouth Atlas shows similar unexplained variation related to spinal fusion procedures, which are now the second fastest growing procedure in the Medicare population. A chief reason for these variations is that the traditional “art” of medical practice involves a lot of guesswork. None of us goes to work thinking, “I’ll ignore the evidence,” but sadly, only 1 in every 5 decisions we make at the bedside and in the office is based on evidence and/or science. Medical error is the fifth leading cause of death in this country, and not surprisingly, the United States ranks fifth to seventh among the world’s leading countries for best value in health care. For physician leaders, the fundamental...
issues to be addressed are the current lack of systems recognition and team training.

**Health Care Delivery Reform**

Health care delivery system reform rests squarely on 5 key pillars of the current quality infrastructure. Launched in March 2011, the National Quality Improvement Strategy (the first pillar) brought all relevant federal agencies together to promote quality measurement. Quality Measurement Development (the second pillar) is under way with more than 60 additional measures scheduled for implementation. Under Value-Based Purchasing (the third pillar), provider profit margins may increase by a couple percentage points, but there will be financial penalties for failure to meet quality targets. Prevention and Wellness (the fourth pillar) adds $500 billion to the Medicare budget to provide appropriate preventive services. The fifth pillar—New Entities and Authorities—encompasses a variety of organizations such as the Patient-Centered Outcomes Research Institute and the Center for Medicare and Medicaid Innovation. Two indications that we are making some headway are the Partnership for Patients: Better Care, Lower Costs, which demonstrates a commitment to reversing the epidemic of medical error, and the Agency for Healthcare Research and Quality’s Effective Health Care Program.

**Payment Reform**

With respect to the economics of health care reform, there are 4 underlying concepts of cost containment through payment reform:

1. Tying payment to evidence and outcomes rather than to units of service (ie, doing the right thing for the right patient at the right time).
2. Bundling payments for physician and hospital services by episode or clinical condition—perhaps the most powerful tool for making dramatic changes in provider behavior.
3. Reimbursement for the coordination of care in a medical home. Are we ready to employ a large force of case managers armed with laptops?
4. Accountability for results (ie, managing patients across all care settings).

The Four Actions Framework (Figure 6) is a thumbnail sketch of what it will take to make care delivery more accountable and drive up value.

**Medical Education Reform**

Four years ago, *Academic Medicine* devoted an entire issue to the question of how to teach quality and safety to medical students and house officers. As editors of this issue, we received reports from 150 teams across the country—stories that made it clear we need a new kind of physician leader.

At the same time, a national medical education reform movement was conceived by an impressive triumvirate: Lucian Leape, MD, Donald Berwick, MD, MPP, and Carolyn Clancy, MD. Medical education reform was among their 5 transforming concepts.

*We envision a culture that is open, transparent, supportive, and committed to learning; where*
doctors, nurses, and all health workers treat each other and their patients competently and with respect; where the patient’s interest is always paramount; and where patients and families are fully engaged in their care.

Health care professionals in training are expected to gain competency in quality and safety to provide leadership in improving health care in conjunction with learning the traditional skills of their specific discipline.  

In 2010, members of the Lucien Leape Institute Expert Roundtable on Reforming Medical Education created a document that identified unmet needs and listed a set of 12 recommendations.  

Three overarching strategies included the following:

1. Setting the right organization context to equip learners with the skills, attitudes, knowledge, and behavior to advance patient safety
2. Strategies for teaching patient safety and integrating these concepts into curricula and practice
3. Leveraging change through accreditation and monitoring standards

As we move toward becoming more accountable, we are faced with a disturbing set of realities. Although doctors are well prepared in the science base of medicine and the skills necessary to care for individual patients, few are qualified or receive any training in the skills necessary to improve patient care quality and safety—skills such as working effectively in teams; understanding work as a process; collecting, analyzing, and displaying data on the outcomes of care; working collaboratively with managers and patients; and being willing to learn from mistakes rather than running from them.

Increasingly, we are importing skills from other industries to understand the “system-ness” of practice and the need for cooperation; for example, modern systems theory, Crew Resource Management (aviation industry), breakdown of barriers to communication (especially “against the authority gradient”). Across all industries and organizations, the key tools to facilitate cooperation are developing a shared purpose, creating an open and safe environment, encouraging diverse viewpoints, learning how to negotiate agreement, and insisting on equity in applying the rules.

For too long, the health professions have operated under the “see one, do one, teach one” process without questioning whether it was done correctly the first time. Recognizing this, the American medical education industry has taken action on a number of fronts. For example:

- The Association of American Medical Colleges launched its Integrating Quality initiative whereby medical schools learn from one another about quality and safety programs across the nation.
- The newly created Quality and Safety Educators Academy brought together 150 junior faculty members, training new leaders and teachers of medical students and house officers.
- A wealth of programs in quality and safety fall under the umbrella of the Veterans Administration.
- The National Patient Safety Foundation launched a quality and safety curriculum and certification examination that is housed under the auspices of the Certification Board for Professionals in Patient Safety.

Despite challenges, organized medical education is getting the message. Recognizing the need to build a strong quality and safety skill set, 3 schools have introduced graduate-level programs in health care quality and patient safety: Northwestern University’s Feinberg School of Medicine (Chicago, IL), the University of Illinois College of Medicine (Chicago, IL), and the Jefferson School of Population Health (Philadelphia, PA). The American College of Physician Executives now offers a 1-day course in health care quality and safety and, on a local level, courses such as Jefferson’s Annual Interclerkship Day are helping educate medical students about their roles in quality and safety.

There are now 6 or 7 peer-reviewed journals in the field of quality and safety including the Journal of Patient Safety, the Journal for Healthcare Quality, Patient Safety & Quality Healthcare, and the American Journal of Medical Quality. In a watershed event, top medical educators wrote about changing the culture in medical education and teaching patient safety in the nation’s leading health policy journal, Health Affairs. However, as pointed out in a recent Institute for Healthcare Improvement publication ("Because Quality and Safety Aren’t Electives”), there continues to be a certain amount of resistance.

Medical professional organizations are beginning to make pronouncements about “professionalism” in medicine, but what are the components of medical professionalism? Although not a single major organization explicitly states it, medical professionalism means a commitment to self-evaluation, measurement, and improvement in what we do every day. A systems view of professionalism might take into account practice settings and external environmental factors (eg, payment, regulation, socioeconomic factors) in addition to interactions with the patient and care team. Whatever definition is agreed on, quality and safety likely will play a more important role in academic promotions as we go forward.
A recent article evaluating obstetrical residency programs suggested that programs be judged and accredited not on process measures but rather on outcomes. In fact, this is about to come to fruition. Beginning in September 2012, the Accreditation Council on Graduate Medical Education (ACGME) will be visiting medical schools to survey what is being taught and monitored with respect to quality and safety before incorporating these elements in a new accreditation system. This will a formidable challenge for the schools, but it is clearly a move in the right direction.

Creating Consumer Value: An Entrepreneur’s Perspective

Arkadi Kuhlmann, HBA, MBA, LLD
Founder, ING DIRECT USA

How is the banking industry similar to the health care industry? There are certain commonalities and parallels. Both are supply-side driven, hugely regulated, and swimming in red tape. Innovation does not necessarily affect the bottom line of either entity, and as far as the average American is concerned, “As long as a change doesn’t affect me, it’s all right.”

Innovation in health care and banking are much the same; we determine what things consumers value highly, change the product accordingly, improve on the design, change the process, and reeducate consumers to change their behavior.

Consider the basic concept of self-service (ie, when costs go down, profit margins go up). In banking, customers wanted everything they were getting—and more—without being required to pay anything additional for it. ING addressed this by simplifying the consumer product—eliminating paper and physical buildings while making maximum use of virtual communications.

For readers who are unfamiliar with the ING model, technology enables the bank to deliver all services. Calls are answered by human beings, processes are completed correctly, and customers are satisfied. Compare this with the typical physician office where the patient is handed a clipboard with a paper form to complete at each visit. Physicians need to help manage their patients’ time as well as their own.

Attracting the right customers with the right attitude leads to success in the banking industry. For instance, the ING concept does not appeal to upper-income Americans who require more personalized services. The lesson for health care is to be clear about what you are delivering. Customers care about the small things, and if you meet their expectations it is a strong positive.

Delivering a full range of services with short, simple transactions can be a pleasant and positive experience for any customer. Frame things in a way that puts the patient first (eg, the patient must leave the hospital bed not for the benefit of the next patient but to allow this patient to return to his or her life).

The belief that marketing is not important is part of the problem for health care providers. In essence, a marketing orientation assures that any business will be organized around the customer. Understanding what is important to the customer/patient is key (eg, looking at the customer when speaking, answering the phone, offering better prices and no service charges/co-pays).

In terms of costs, reorganizing delivery and automating processes eliminated one third of the cost of service delivery for ING.

A successful business knows its mission and what it stands for. In health care, what attitude is built into the brand? Individuals have different functions, and the time/value of resources is just as important as money. Create as little friction as possible and be more transparent about the value proposition. Just as people congregate in airports and shopping malls, there are opportunities to facilitate “café conversations” in hospitals.

Approximately 7.5% of people change banks every year. They do not change banks to receive a new toaster or other enticement, but because they are unhappy with poor service. The psychology of money is unique. It has a rational component and a huge emotional component. Value is delivered through an emotional attachment. As businesses evolve, interaction with customers/patients (eg, quality of life, lifestyle) becomes more important. Stop and think what it might be like if Disney ran your hospital.

Today’s health care organizations compete in a global marketplace. Patients using frequent flier miles to travel to India for heart transplant surgery by doctors trained in the United States report very positive experiences, with excellent preop and postop care.

Americans spend money on unimportant things such as video games, sports tickets, and iPhones. Consumers need to understand value. What does the average woman think “care” means? Valet parking could be a strong selling point if the price point is right.

With a huge drop in the value of assets in 2008, ING engaged all employees on the phones to understand what its customers were thinking. As the organization grew, we noticed that the dynamics changed in units beyond 250 people. In response, units were not permitted to grow beyond 250. The implicit message is that the country needs to get back to doing things at a local level (eg, all mortgages in local banks).

“The best innovations are ‘destructive’ innovations in smaller settings.”
Creating Value Through Science

Michael Lauer, MD
Director, Division of Cardiovascular Sciences, National Heart, Lung, and Blood Institute, National Institutes of Health

Although it does not typically spring to mind, science is a core component of value in health care. In the midst of recent debates on health care reform, the Journal of Clinical Investigation devoted a special issue to this theme, with essays written by thought leaders in the field. One of these essays, written by Elizabeth Nabel, MD, made the case that biomedical research is the basis for all progress in health care and, for this reason, there can be no discussion of “health reform” or “value” without talking about science.31

Stories Linking Biomedical Research to Health Care

In 1940, Franklin Delano Roosevelt ran for an unprecedented third term as President of the United States. One week before the election, he dedicated a new National Institutes of Health (NIH) campus, characterizing it as a “critical form of national defense.” Five years later, with access to the best doctors in the country, he died of a hemorrhagic stroke a day after his blood pressure measured 250/160. Imagine that happening to a president today!

In the years after President Roosevelt’s death, the NIH became increasingly interested in hypertension, enabling a number of critical efforts in basic science, epidemiology, and ultimately clinical trials. The National Heart Institute (NHI) supported work performed in the laboratory of Cleveland Clinic’s Irvine H. Page, MD, who described the neuroendocrine mosaic that underlies the development of hypertension.32 The seminal Framingham Heart Study, considered by many as the paradigmatic population-based cohort, began recruiting subjects in 1948. In 1961, Kannel and colleagues published results of their 5-year follow-up of approximately 5000 adults, coining and applying the term factors of risk for the first time.33 The Framingham scientists established the associations of hypertension and hypercholesterolemia with the development of coronary heart disease (CHD). These factors precede the overt development of CHD and are associated with the increased risk of its development. However, for the biomedical research community, the most important statement in the paper might have been this:

Whether or not the correction of these abnormalities once they are discovered will favorably alter the risk of development of the disease, while reasonable to contemplate and perhaps attempt, remains to be demonstrated.33

In other words, it is not enough to show an association to establish a preventive strategy—interventional research had to happen first. A number of clinical trials—some supported by NIH, some by other public and private sponsors—showed that treatment of hypertension could dramatically reduce the risk of stroke, heart disease, and premature death. We came to realize that there was no such thing as “benign essential hypertension” and, over time, medical treatment of hypertension became the standard of care. However, the story is not over. One continuing, still unanswered question is how aggressively we should lower blood pressure. In 2010, the NIH-sponsored ACCORD hypertension trial reported its main results. To everyone’s surprise, bringing diabetic patients’ systolic blood pressure down from 140 to 120 did not result in better outcomes.34 Today, the NIH is funding a 10,000-patient trial (SPRINT) comparing more aggressive and less aggressive treatments in broad populations of patients, including those who are older and have kidney dysfunction.

Although hypertension certainly has not been cured or eliminated, there is no question that the impact of biomedical research has been impressive (Figure 7). Consider the value of care today compared with the value of care received by President Roosevelt. Biomedical science made a world of difference.

Hypertension is only 1 disease (albeit an important one!). Asking a more general question, policy makers and economists have wondered: Is investment in biomedical research worth it? Between 1960 and 2000, life expectancy in the United States increased by 7 years, with 70% of the improvement attributable to reduced mortality from cardiovascular disease.35 One analysis noted that nearly all the reductions in cardiovascular mortality can be attributed to newly developed strategies, some “high-tech” (eg, defibrillators, pacemakers, appropriate use of stents), some “low-tech” (eg, medical management of blood pressure and cholesterol), and some behavioral (eg, reduced smoking rates); all of these strategies owe their existence to scientific discoveries. Taking into account the costs of research and implementation of treatments spawned by research, the estimated return on investment for cardiovascular research may be as high as 4 to 1.

Not all stories go so well. There are a number of cases in which the medical profession has adopted practices that were not based on high-quality science and that turned out to be either useless or harmful. In 2005, the Food and Drug Administration approved the humanitarian use of intracranial stents on the basis of a 45-person trial without a control group, which led optimistic surgeons to insert the devices into thousands of patients. On the heels of a rigorous controlled study of 450 patients demonstrating that patients with standard treatment (ie, drugs, behavior modification) fared better than those with
treatment plus stents, a New York Times editorial came to the following critical but fair conclusion:

_This case . . . clearly shows the value of conducting rigorous controlled studies with enough patients to provide meaningful results. This is just the kind of “comparative effectiveness” research that the national health care reforms seek to promote._

The intracranial stent story is one of “déjà vu all over again.” In the 1960s and 1970s, numerous clinical scientists described an increase in sudden deaths associated with ventricular premature contractions (VPCs). Many doctors wrote prescriptions for antiarrhythmic drugs, largely based on “hope,” though some scientists urged caution, noting that there were no controlled trials showing that use of antiarrhythmic drugs could reduce death rates. In a remarkable echo of the 1961 Framingham paper, Bigger and colleagues concluded their article on VPCs with the caveat, “Our results do encourage the pursuit of further studies.” Those “further studies” were eventually done, led by the Cardiac Arrhythmia Suppression Trial (CAST), which revealed that those patients treated with antiarrhythmia drugs had increased death rates and fared worse than those not treated with these drugs. Thought leaders pointed out that CAST emphasized the need for rigorous trials with mortality as an end point to inform treatment decisions.

A more recent story began in 1993 when, on the basis of a reported observation, cancer specialists began treating breast cancer in women with unusually high doses of chemotherapy drugs. The doses were so high that the drugs obliterated the bone marrow, which then had to be subsequently replaced via autologous bone marrow transplants. Hundreds of physicians practiced this unproven treatment and some actively campaigned against a controlled trial in the belief that it would be unethical to place patients in a control group. Such
resistance made organizing and populating the trial a lengthy and difficult process. The trial was eventually done, and the results, published after 20 years, showed no improvements in survival.

During that time . . . an estimated 30,000 breast cancer patients suffered through high-dose chemotherapy, only a small fraction of them as part of a clinical trial. All told, the nation spent $3 million paying for it, while an estimated 4,000–9,000 women died, not from their cancer but from the treatment. 41

Looking at the preceding stories—hypertensive cardiovascular disease, stents for cranial stenosis, VPCs, breast cancer—it is easy to see the positive value of science; science to develop new and powerful ways to prevent and treat disease, and science to address the negative effects of “hope” and “hype” on health care.

Why Is Science Undervalued?

For hundreds of years, physicians have employed treatments that they believed in without knowing the benefits and potential harms. A 2007 Congressional Budget Office report alluded to this phenomenon without explaining it:

A limited amount of evidence is available about which treatments work best for which patients . . . yet current practice tends to adopt more-expensive treatments even in the absence of rigorous assessments of their impacts. 42

In 2009, Tricoci and colleagues analyzed all of the active American College of Cardiology/American Heart Association recommendations and found that only 11% were based on high-quality scientific evidence (eg, clinical trials). Another 50% were based solely on expert opinion.

A variety of outside observers have offered their perspectives. An article provocatively titled “Why Doctors Hate Science” decries physicians, pharmaceutical companies, and medical device manufacturers that vilify and ridicule comparative effectiveness research and that employ scare tactics to discourage it. 43 There are many examples of physicians resisting science: vitamins to prevent cancer (which thus far have failed to work), screening for prostate cancer (which leads to overdiagnosis, meaning that men receive treatments that do not help them), postmenopausal hormone therapy (which increases the risk of breast cancer and stroke), and, as mentioned, intracranial stents to prevent stroke, antiarrhythmic drugs for ventricular premature beats, and bone marrow transplants for breast cancer.

A more benign but no less unsettling explanation is based on underappreciated cognitive biases in human decision making and thought. In 2011, Daniel Kahneman, PhD, a Nobel Prize–winning psychologist and behavioral economist, described the human tendency to create stories based on small bits of information (ie, “what you see is all there is”). “It is easier to construct a coherent story when you know little. Our conviction rests on a secure foundation: Our almost unlimited ability to ignore our ignorance.” 44 In a coauthored article, he described concepts such as the “illusion of validity” (ie, overinterpreting surrogate outcomes) and “the law of small numbers” (ie, explaining the universe on the basis of a small experience). 45 The message here is that we need to be hypervigilant.

A related explanation, introduced by George A. Akerlof, PhD, another economics Nobel Prize winner, is the “lemons on wheels” theory. Throughout the health care system, people suffer from “information asymmetry,” in which parties to transactions are armed with varying levels of knowledge and skills. Akerlof explained the idea by describing the market for used cars. Some used cars are bad (“lemons” worth $10,000) and some are good (“peaches” worth $20,000). Knowing that some are “lemons” but being unable to tell the difference, the consumer offers $17,500. The owner of the “peach” declines the offer while the owner of the “lemon” jumps at it—making the consumer suspicious and likely to reduce the offer. With such information asymmetry, bad products drive out the good products—and good products, like health care practices based on high-quality science, have trouble entering the market.

Health care is plagued with layers of information asymmetry. With less information about their care than their physicians, patients may not know if their treatment is appropriate. Many of our health care woes stem from this information asymmetry:

- Nonpaying patients demand the most—and the newest—care.
- Physicians want to maximize their income and minimize lawsuits.
- Payers want to minimize payouts without knowing how sick their patients are.
- Technologies are advancing and increasingly expensive.
- Information is lacking and costly to obtain. 46

To correct information asymmetry, we must embrace science. There are some groups that clearly get this. As an example (an inspiring example), The National Marfan Foundation has partnered with the NIH and gone on record as not recommending a potentially better drug for managing the disease until a controlled trial is completed.
because, until that time, we do not know that the new treatment is better.\footnote{This joining of forces and shared decision making that is grounded in exploiting the scientific method is vital to value in health care.} How can we embrace science as a public good (ie, nonexcludable, nonrivalrous) in which all citizens participate? For instance, there was a time when most US children with cancer were enrolled in clinical trials. Some respected thought leaders have gone so far as to suggest that everyone in our society has an obligation to participate in biomedical research.\footnote{Would we participate? A poll conducted by Research America revealed that, although 75\% of health care consumers reported that they would be likely to participate in clinical research, fewer than 10\% of practicing physicians participate in or have anything to do with clinical trials. There is a clear “disconnect” in which most of the medical profession operates in a universe outside biomedical research.} Let me end by pointing out that, in the world of health care, poor value that stems from bypassing science is hardly a new problem. More than 350 years ago, the Flemish physician John Baptist Van Helmont railed against bloodletting as a cure for a broad range of ailments. He challenged his peers to “divide people [with fevers] into halves . . . cast lots . . . [and] see how many Funerals both of us shall have. . . . Here your business is decided.”\footnote{The rational, well-founded call for scientific method is vital to value in health care.} The Christiana Care Health System Value Institute Value Symposium


