The Quality-Value Proposition
in Health Care

G. Landon Feazell and John P. Marren

Powerful forces are converging in US health care to finally cause recognition of the inherently logical relationship between quality and money. The forces, or marketplace "drivers," which are converging to compel recognition of the relationship between cost and quality are: (1) the increasing costs of care; (2) the occurrence of another medical malpractice crisis; and (3) the recognition inside and outside of health care that quality is inconsistent and unacceptable.

It is apparent that hospital administrators, financial officers, board members, and medical staff leadership do not routinely do two things: (1) relate quality to finance; and (2) appreciate the intra-hospital structural problems that impede quality attainment.

This article discusses these factors and offers a positive method for re-structuring quality efforts and focusing the hospital and its medical staff on quality. The simple but compelling thesis of the authors is that health care must immediately engage in the transformation to making quality of medical care the fundamental business strategy of the organization. Key words: quality, value, patient safety, business case, medical staff culture, organizational structure, clinical performance, peer review, Institute for Healthcare Quality and Value (IHQV).

POWERFUL forces are converging in US health care to finally cause recognition of the inherently logical relationship between quality and money. Within the health care community, it has been too difficult politically and professionally to confront, much less solve, the mounting quality deficiencies. To the payers, employers, patients, and the government, faced with the spiraling costs of care and the perceived value of the care received, these same quality deficiencies are increasingly apparent and unacceptable.

The forces, or marketplace "drivers," that are converging to compel recognition of the relationship between cost and quality are: (1) the increasing costs of care; (2) the occurrence of another medical malpractice crisis; and (3) the recognition inside and outside of health care that quality is inconsistent and unacceptable. The potential for quality to have a major effect on the cost of health care is fundamentally and intuitively logical. Health care costs have risen in the United States to $1.4 trillion per year in total expenditures. Yet, the plea from the providers of health care is that there is not enough money.

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Health care simply cannot and will not continue to operate as a “cost plus” enterprise.

When the 14 percent gross national product (GNP) for health care in the United States, with some 40 percent of our population uninsured, is compared with 9 percent and less in other industrialized nations with access to health care for all, and with spiraling increases in costs returning, the pressure from employers and payers will again be as relentless as it was at the inception of managed care. The present economic environment of health care demands the realization that there is enough money. Solutions must be found to provide more efficient and effective care with less cost impact from patient injury and malpractice premiums. The per capita expenditure on health care compared to other industrialized nations (shown in Figure 1) clearly demonstrates the need for health care to reorganize to deliver consistently reliable, high quality, error-free health care more efficiently and more effectively.

There is now a dramatic and sudden interest in health care centering on the question of whether there is a financial relationship between quality and cost—a “business case”—for quality and patient safety in health care. This phenomenon, which is evident in the press\(^1\) and in the literature,\(^2\) is not because of the inherent logic in the proposition or because it is the expectation of professional conduct, but because of the realization that changes in quality will not occur in health care unless a financial benefit can be proven to drive the movement and motivate the participants.\(^3\)

Health care quality is best analyzed within the framework proposed by Mark R. Chassin, MD—overuse, underuse, and

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**Figure 1. Per Capita Expenditures on Health**

![Figure 1. Per Capita Expenditures on Health](image_url)

*Source: Sean Tunis, CMS, 2000.*
misuse. After evaluation of the medical literature within this framework, Chassin, a leading expert in health care quality, reaches the following conclusion:

As the research literature makes clear, quality problems of all three varieties abound in American medicine. The majority of these problems are not rare, unpredictable, or inevitable concomitants of the delivery of complex, modern health care. Rather, they are frighteningly common, often predictable, and frequently preventable. Viewed by those companies that have committed themselves to the most advanced applications of industrial quality management, the magnitude of the failures or quality defects in the provision of health care must seem stupefying. (Emphasis added.)

During the past years, health care has attempted to transform the quality movement to continuous quality improvement or total quality improvement models. The existing health care quality movement, however, has been unable to significantly impact and improve the quality of health care in the United States. Indeed, at the 10th anniversary meeting of the Institute for Healthcare Improvement, the president and chief executive officer (CEO) of this leading and prestigious organization stated that despite all of their efforts over the past 10 years, no improvement in quality was achieved. In view of these converging forces to compel quality and patient safety accompanied by the realization that existing quality efforts are not adequately changing the quality of care, the issues then become: (1) why the quality improvement is not achieving a dramatic impact in health care; and (2) what the reasons are for this failure.

Some indicators of the magnitude of the quality of care deficiencies in US health care leading to preventable injuries and deaths are evident in the following insights:

- Medical error results in as many as 400,000 deaths per year and as many as 98,000 hospital deaths per year (equivalent of one jumbo jet crashing daily);
- 1/4 of hospital deaths are preventable;
- 1/3 of hospital procedures expose patients to risk without improving health;
- 1/3 of all laboratory tests with abnormal results are not followed up by the physician; and
- 30 percent of acute care patients and 20 percent of chronically ill patients receive care that is not indicated.

According to the Robert Wood Johnson Foundation, the risk of death from riding on a set of recalled Firestone tires is much lower than the risk of death from avoidable hospital error. The startling contrast for risk of death is 91 per million vs. 2,917 per million, or a 32 times greater risk of death in health care. This perspective states the magnitude of the problem in a recent and easily understandable context.

A recent RAND study further confirms the problems with quality of care based on a study of 20,000 adults from 12 cities, with 30 acute and chronic conditions, using 439 quality indicators. The study concludes that only 55 percent of US patients receive the care recommended by experts and the most current medical science. Two specific problems highlighted by the study are that only 45 percent of those presenting with heart attacks receive beta-blockers and only 24 percent of diabetics received three or more glycosylated hemoglobin tests within a two-year period.

Variation in health care rates presents very compelling evidence of the discrepancies that will later be considered as overuse and
underuse. Cardiac bypass surgery rates range from 3/1000 in Albuquerque, New Mexico, to more than 11/1000 in Redding, California. During 1995 and 1996, the average number of specialist visits by decedents (patients in the last six months of life) ranged from two in Mason City, Iowa, to more than 25 in Miami, Florida. The average number of days per decedent spent in the hospital ranged from 4.6 in Ogden, Utah, to 21.4 in Newark, New Jersey. In addition, one-half of decedents experienced an intensive care unit admission in Miami, Florida, vs. only 14 percent in Sun City, Arizona.11

There are widely accepted indications of additional factors that seriously affect the quality of health care in the United States. For example, patient non-compliance is estimated to cause 125,000 deaths annually, while 50 percent of all prescriptions filled are not taken correctly and 20 percent are not even picked up from the pharmacy when prescriptions are ordered.

The failure in the United States to establish the fundamentals of a market-based health care system with such key capabilities as standardized measures of quality must be the focus of efforts to improve quality and patient safety. Further, as this analysis is presented, the distinction between health care and health of Americans should not be overlooked when addressing access and inconsistencies in quality care. Indeed, some authors, such as Barbara Starfield, MD, conclude: “The fact is that the US population does not have anywhere near the best health in the world.”12 Infant morbidity and mortality rates in the United States, compared to other industrialized nations, certainly create concerns about this overall health perspective. Certainly, in the context of value, with the disproportionate spending on health care in the United States, we should expect more as a society than is our reality.

As an introduction to the discussion of the quality-value proposition, some consideration of costs and distribution of costs is helpful to evaluating the challenges and opportunities to impact costs of care with quality initiatives. George C. Halvorson, chairman and CEO of the Kaiser Foundation Health Plan, recently gave the following analysis of the cost distribution of care: 20 percent of people account for zero percent of the total cost of care; 70 percent of people account for 10 percent of the total cost of care; 5 percent of people account for 50 percent of the total cost of care; while 1 percent of people account for 30 percent of the total cost of care.

The cost distribution among working Americans is diagramed in Figure 2.

The purposes of this article are to present and to consider the following aspects of the relationship between quality and cost in US health care:

- The six elements of the health care quality-value proposition, including a brief discussion of their causes and effects;
- Current research efforts to establish the validity of the cost-quality relationship;
- Fundamental causes of the failure to affect quality; and
- The basis for solutions to dramatically improve quality while reducing costs.

Elements of the Quality-Value Proposition

What we know for sure is that there is far too much overuse, underuse, and misuse to tolerate in a complex, high-risk, patient dependent, and financially burdensome industry. We also know that there are seven
compelling reasons for the profound and undisputable correlation between cost and quality in health care. Five of these reasons are negative impacts from financial losses, while two of these elements are from positive additions of money to the bottom line. Reading the literature and consulting with health care clients suggest that these seven reasons are not well recognized and understood. These reasons are considered the elements of the quality-value proposition.

The five negative impacts from financial losses are:

1. The aggregate cost of preventable injuries (morbidity) and preventable deaths (mortality) in inpatient and outpatient care;
2. The indirect cost of unnecessary medical malpractice insurance premiums;
3. The intangible cost of public perception of quality on the selection of providers;
4. The increased costs of directors and officers (D&O) insurance; and
5. The regulatory costs from poor quality.

The two positive additions to the bottom line are:

1. The value of financial incentives now being paid and contemplated (increased revenue) to correct the
exiting perverse payment system; and

2. The increased profit margins from effectiveness and efficiency in health care delivery.

The Cost of Preventable Injuries and Deaths

The total financial impact of the costs of preventable medical injuries is $17 to $29 billion, which includes costs in addition to health care costs, such as lost income, lost household production, and disability. Over one-half of the costs of these preventable injuries go exclusively toward health care costs. This means that $8.5 to $14.5 billion are spent annually for additional health care caused by preventable medical injuries. In 1996, based on these calculations, these figures represented roughly 2 percent of total national health care expenditures. Brought forward to the year 2002, with a total cost of $1.4 trillion, 2 percent for the additional costs of preventable injuries translates to $28 billion annually.

These calculations present the cost of preventable injuries. The Institute of Medicine (IOM) focused on preventable deaths, as have other authors, such as Lucian Leape, MD, and Michael Millenson. Millenson reminds us of the study by Don Harper Mills, MD, JD, years ago during the 1970s medical malpractice premium crisis, based on 21,000 medical records from 23 California hospitals, which concluded that more than 10,000 hospital patients a year die from iatrogenic causes in California. Mills calculated from his methodology that approximately 120,000 preventable hospital deaths occurred per year. After reviewing the IOM report and findings, Millenson concludes that between 1978, when Mills’ work was published and the subsequent work of Leape and the IOM in 1999, a total of some 2.5 million preventable deaths occurred during that entire span of 21 years from what he characterizes as the “toll of inaction.” He comments:

The sheer size of such statistics can render them impersonal. So divide the number of deaths by the average number of acute care hospitals during this period (generously, about 5,500). What you end up with is nine to twenty-two patients unnecessarily dying every year at every community hospital in the country, every year, for twenty-one years. One can argue what percentage of these deaths was preventable; one cannot argue that there was any serious effort by providers to prevent them.

After the release of the IOM report, To Err Is Human,16 hospital deaths from medical “errors” became the focus of the health care quality debate. The impact of this report and the subsequent controversy are clearly caused by its most frequently referenced death toll figures of 44,000 to 98,000 per year. The accuracy of these figures has been widely challenged, ranging from criticisms of the methodology of the original studies on which the report is based17 to criticisms of the terminology used in the report by an author of the original study, Troyen A. Brennan, MD.18

The surprise in health care quality should not be the attention generated by the IOM report, but rather that so little is known about the fundamental statistics on health care quality in the United States. It is significant to recognize that the IOM figures were derived from studies of the medical records of several relatively small patient populations dating back to 1984 in NY hospitals, and then extended to Utah and Colorado...
hospitals. The original Harvard Medical Practice study, which reviewed over 30,000 hospital records, found that injuries from care itself (adverse events) occur in 3.7 percent of hospital admissions. Over half of these injuries are preventable, and 13.6 percent of these injuries lead to death.19

While there may be debate as to the precise rate of preventable deaths in US hospitals, there is a developing body of knowledge about the “defect rates” in the current delivery of health care. Many important contributions to understanding health care quality include studies that classify quality challenges into the following three categories:

1. Overuse—defined as providing a health service when its risk of harm exceeds its potential benefit;
2. Underuse—defined as failing to provide an effective service when it would have produced favorable outcomes; and
3. Misuse—defined as avoidable complications to appropriate health care.1

Insight into examples of clinical quality for each of the categories of overuse, underuse, and misuse for specific medical conditions and the causes of those defects can be summarized as follows:

- **Overuse etiology:**
  - Payment incentive, such as fee-for-service;
  - Physician enthusiasm for intervention;
  - Primary care physician expectation of specialist (e.g., coronary angiography, upper-GI endoscopy, knee arthroscopy, etc.);
  - Patient expectation (e.g., antibiotic, x-ray, laboratory, etc.); and
  - Fear of malpractice (i.e., defensive medicine).21

Examples of overuse from medical research include hysterectomies, in which 16 percent performed in a group of managed care plans were determined to be inappropriate (ranging from 10 percent to 27 percent among plans),22 coronary angiography and revascularization,23 and antibiotic therapy.24

- **Underuse etiology:**
  - Financial barriers (e.g., lack of insurance, the imposition of co-payments and deductibles, benefit packages not covering preventive care, etc.);25 and
  - Rapid and recent accumulation of an enormous amount of clinical efficacy data.26

Underuse of beta-blockers is an example from medical research. Seventy-nine percent of eligible heart attack survivors fail to receive beta-blockers, which results in a defect rate of 790,000 per million (less than Sigma Level One).27 Another example is the alarming rate of patients with clinical depression who are not detected or treated adequately: 58 percent, with a defect rate if 580,000 per million.28

- **Misuse etiology:**
  - Errors in diagnosis (22 percent);
  - Mishaps related to non-invasive, non-drug-related treatment (21 percent);
  - Mistakes in medication use (12 percent);
  - Technical complications of surgery (8 percent); and
  - Surgical wound infections (6 percent).29
The medical literature is much less definitive about the causes of misuse than the other two categories of problems.30

Chassin considered these quality concerns and examples of health care performance and observed:

If the performance of certain high-reliability industries, whose standards of excellence we take for granted, suddenly deteriorated to the level of most health care services, some astounding results would occur. At the defect rate of 20 percent, which occurs in the use of antibiotics for colds, the credit card industry would make daily mistakes on nine million transactions; banks would deposit 36 million checks in the wrong accounts every day; and deaths from airplane crashes would increase one thousand fold.31

Preventable injuries and deaths are best illustrated by misuse (i.e., avoidable complications to appropriate health care). Chassin makes the point that relatively little is known about misuse,32 and certainly even less is published about misuse. However, complications of medical care are the heart and soul of peer review in US hospitals, as well as the source of professional liability litigation and claims. QualVal Systems has learned from extensive consulting engagements throughout the United States over some 30 years of experience that there is a significant negative financial effect on the cost of providing health care services from a variety of sources that all converge on quality of care. These impacts are from overuse, underuse, and misuse. While we are not able to publish our studies due to the highly confidential and privileged nature of external peer review consultations, we can state unequivocally that there is tremendous financial waste in the health care system from all three categories of clinical performance. In the context of the cost of preventable injuries and mortality, we will focus on misuse for this category and comment on overuse and underuse in the section titled “Increased Profit Margins from Effectiveness and Efficiency.”

Misuse manifests in our experience in instances, such as:

- Removal of the wrong kidney, surgery at the wrong level or on the wrong limb;
- Failure to timely perform cesarean sections;
- Hemorrhage and brain damage from laceration of blood vessels during lumbar laminectomy;
- Shock from accidental injection of undiluted epinephrine; and
- Death from failure to properly monitor conscious sedation during endoscopy.

These are but a few of the medical tragedies that QualVal routinely investigates using peer review, including root cause analysis, to determine if these isolated events or patterns with likely potential for repetition. The cost of increased lengths of stay, increased levels of care, and supportive measures is tremendous in these events.

Most of the efforts to solve quality deficiencies leading to medical errors have focused on medication errors. Indeed, the costs of medication errors are high in financial terms, when the estimate of the cost for each preventable adverse drug event in one teaching hospital is almost $4,700.33 However, as the studies on overuse, underuse, and misuse clearly demonstrate, and the IOM report emphatically states, the primary source of medical errors and the greatest health care quality challenge is the failure to diagnose
(approximately 21 percent of the medical errors). After a careful review of proprietary databases of liability insurance carriers, it seems clear that medical malpractice claims data would reveal exactly the same conclusion. As Leape points out, autopsy studies also suggest that preventable deaths may also be many more than 98,000 per year. There are serious concerns from these studies regarding incorrect or missed clinical diagnoses, as well.34

Recalling the Six Sigma cost of poor quality as a function of Six Sigma performance levels (see Figure 3), it is insightful to consider the cost of poor quality in a $1.4 trillion industry that functions at a Two Sigma to Four Sigma performance level.

It is clear that the quality of health care in our communities places a tremendous burden on patients and their families from the costs of preventable injuries. This cost extends to employers and third-party payers. A recent report developed by the Midwest Business Group on Health, in collaboration with the Juran Institute, asserts that these errors:

\[\text{[N]ot only exact a human toll in terms of lost lives and pain and suffering, but they also create a huge economic burden}\]

**Figure 3. Cost of Poor Quality as a Function of 6\(\Sigma\) Performance Levels**

<table>
<thead>
<tr>
<th>Sigma/Defects per Million</th>
<th>Cost per Million Items (Assuming $1000 per Defect)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/308,000</td>
<td>$308,000,000</td>
</tr>
<tr>
<td>3/66,800</td>
<td>$66,800,000</td>
</tr>
<tr>
<td>4/6,210</td>
<td>$6,210,000</td>
</tr>
<tr>
<td>5/230</td>
<td>$230,000</td>
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<tr>
<td>6/3.4</td>
<td>$3,400</td>
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*Source: Joseph DeFeo.*

in terms of both the direct costs of treating complications and the indirect costs of lost productivity and premature death.35

This study estimates that poor quality health care costs the typical employer between $1,700 and $2,000 per covered employee each year.

**Indirect Costs of Medical Malpractice Insurance**

The global insurance and reinsurance industry faced the January 1, 2003, renewal season having lost $175 billion (US) of capital over the last two years. This unprecedented erosion of capital has arisen from a combination of underwriting losses, underreserving on earlier years, and investment losses.36 Within this dismal insurance and reinsurance marketplace, medical malpractice insurance (health care professional liability insurance) has gone from being the most profitable of all property and casualty lines of insurance in the mid-1990s to now being the least profitable. As a result, medical malpractice insurance premiums are soaring faster than at any time since the mid-1980s. These trends are the result of increased verdicts settlements and the rising legal and related expenses to defend cases. Within this backdrop, some insurance carriers are even pulling back from offering health care professional liability insurance. St. Paul Insurance, faced with $940 million in medical professional losses in 2002, has completely withdrawn from the business, sending 40,000 physicians, 72,000 other health care professionals, 750 hospitals, and a large number of nursing homes looking for a new insurer. St. Paul’s staggering losses were based on runaway frequency
and severity, a phenomenon shared by other companies.\textsuperscript{37}

Jury Verdict Research reported a 43 percent rise in the median medical malpractice awards between 1999 and 2000, hitting the highest median ever of one million dollars. The statistics on median verdicts can be misleading, however, unless the observer understands that cases for the defense, zero verdicts, and cases dropped or settled are not included in this number. This is the oft-quoted basis for the current problem in medical malpractice called “frequency of severity,” with unprecedented large verdicts and settlements experienced nationally. The presentation of Troyen A. Brennan, MD, JD, at the Harvard Quality Colloquium summarized the relationship between premiums being driven by increasing awards from Jury Verdict Research as shown in Figure 4.

Brennan summarized the frequency of claims as rising slowly, but still far from the frequency in the mid-1980s (see Figure 5). In this marketplace, primary purchasers of health care professional insurance can expect to see double to triple digit increases for the next two years. Reinsurance pricing has hardened in 2002, but London/European reinsurers have created a market for this business. Reinsurance pricing is now subject to stringent actuarial analysis, not just from the lead underwriters, but also from the majority of reinsurers, with reinsurance buyers expected to see at least double digit increases in the next two years.\textsuperscript{38}

\begin{figure}[h]
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\includegraphics[width=\textwidth]{Figure4.png}
\caption{Median Medical Malpractice Awards and Settlements in the US}
\end{figure}

\textit{Source: Troyen Brennan based on Jury Verdict Research Data.}
Medical historian James Mohr concludes that malpractice litigation in many ways is a direct consequence of the clinical laxity of physicians. He recently wrote that patients had no alternative but to “try to hold individual practitioners, one at a time, to whatever standards they or their (malpractice) lawyers, one at a time, wanted to impose.”

Michael Millenson, the noted author of *Demanding Medical Excellence*, comments on this article by stating: “Put differently, it is the doctors, not the lawyers, who have turned patients into plaintiffs.” Millenson reminds us of an article by medical sociologist Eliot Freidson in the early 1970s when he wrote: “When doctors were asked what they would do about a colleague whose behavior violated technical norms of conduct, the most common response was ‘nothing.’” The response of individual physicians and organized medicine to the current wave of spiraling medical malpractice premiums—to cap damages for pain and suffering and other tort reforms—fails to recognize the current insurance realities of losses in the total insurance and reinsurance marketplace. The impacts of both the depletion of reserves from 9/11, and the reality that malpractice premiums increase when the bond market falters, are root causes of premium increases. Those who point to the success in stabilizing the California malpractice premiums with such a cap fail to recognize that this phenomenon occurred when the...
state introduced strict regulatory controls on premiums.

The essence of the malpractice premium tragedy in the United States, however, is that malpractice insurance companies have failed and refused to invest significantly from their vast financial resources in the reduction of medical errors that lead to losses and, ultimately, to premium increases. The prevailing notion among most malpractice carriers, with notable exceptions (e.g., COPIC, the medical society company in Colorado, and MMI Companies), is that they corporately believe and behave on the premise that medical errors cannot be prevented. They have traditionally seen risk management as “loss control,” from a purely financial perspective, rather than significantly investing in risk and liability reduction strategies.

The current insurance and reinsurance marketplace, particularly demonstrated in London and European companies, has recently undertaken a much more rigorous program of providing real financial incentives and premium reductions to insureds who demonstrate real risk reduction programs. When premiums are doubling and tripling, the “pain” may be enough from these immense additional costs to motivate health care organizations to see the financial benefit of quality and patient safety.

In recent months, the crisis in premiums for medical malpractice insurance has resulted in a large number of hospitals, both large and small, increasing the initial portion of their retained liability exposure in huge amounts and proportions. In large hospitals that retained the first $5 million of exposure per claim (and not capitated by an aggregate amount), the retention has increased to $15 to $20 million per claim. The net effect of such liability retention is to risk the very existence of the institution on not suffering large numbers of large verdicts. These health care institutions must immediately look beyond their current efforts to limit liability exposure with legislative capitation on damages. It is an imperative of the highest magnitude that boards of trustees immediately commit themselves and their organizations to minimizing liability exposure by drastic improvements in quality and reduction of patient injuries. The gradual approach to quality in the past must be replaced with the sense of urgency demanded by the circumstances of such massive retention in liability. They must further guard carefully against the temptation to skimp on the investigation of claims and the preparation for the defense of cases. With the retention of liability also comes the cost of investigation and defense. Proactive approaches to early recognition and settlement of claims are examples of the survival strategies that must be understood and undertaken.

A recent editorial published in many US newspapers by a leading health care quality expert cautioned against the continued belief that bad doctors and bad people are responsible for errors in medicine and that it is a problem with systems and processes, not people. This has been the mantra for many years in the United States, and it has become a part of the problem and not a part of the solution for liability costs in US medicine. Among experts in medical malpractice liability, it is well known that a small percentage of physicians are responsible for a very large percentage of financial loses.

Public Perception of Quality

The US public is only just beginning to become aware of the magnitude of the health care quality problem. There has been
comparatively little public outcry about patient safety in health care. However, the public is rapidly coming to understand that compared with other industries, the expectation for health care quality is very low.

There are ominous signs that the public perception, distrust, and anger are readily apparent, however. The first barometer is always sentinel jury verdicts in medical malpractice lawsuits. Juries throughout the United States are speaking clearly and loudly in failure to diagnose cancer cases, for example. These verdicts are heightened when there is apparent financial greed in business incentives for the hospital(s) or physician(s) involved.

When QualVal was retained in the 1990s to review the quality issues inherent in removing the wrong kidney in a patient, it was a national news story highly publicized on CNN and in the local Boston newspaper. On the taxicab ride to the hospital, we asked the driver what effect the event would have on the local community in terms of future patient selection of hospitals. His answer was basically that no one in the community would consider going there again. Upon entering the hospital and during the introductory meeting with the hospital CEO, the same question was asked. His response to the exact question was that it would “blow over in a month or so.” Of course, the cab driver was right. News sources now focus on medical errors in a daily barrage of negative publicity for specific institutions and practitioners. The impact of such negative publicity and the resulting public perception can be financially devastating, especially in competitive markets.

Public perception, however, should also be viewed from the positive perspective of adding revenue to the bottom line. QualVal has experienced dramatic results from physician groups that have organized to publicize the quality of their outcomes, particularly in markets in which payers and large group purchasing consortia select and de-select physician groups for eligibility on their panels. The Federal Trade Commission rendered a favorable opinion to a coalition of the prominent cardiology practices in Denver, Colorado, to share financial information on the basis of the organization’s mission to improve quality and patient outcomes. Some medical specialty organizations and even physicians and physician groups are more frequently electing to collect data and publicize results of the quality of their outcomes to attract patients, using organizations, such as Outcome Sciences in Boston. The logic and the argument favoring such an approach are well articulated by Steven F. Isenberg, MD, and Richard E. Glicklich, MD, in Profiting from Quality: Outcomes Strategies for Medical Practice.

Cost of D&O Insurance

While we do not typically think of D&O liability insurance and possible exposure to liability related to medical malpractice at the board level, imagine the following scenario. Because of the well documented (in the literature) reluctance of physicians to conduct enthusiastic peer review, Hospital A continues to renew the privileges of Doctor X who routinely performs endoscopies on patients when it is not clinically appropriate (overuse), and in a manner that hurts the patient (misuse). Doctor X is a popular physician, and even though there have been incidents reported about Doctor X, he has not been sanctioned or recommended for monitoring or any other corrective action. Remember, the board of the hospital remains
responsible for the quality of care and to
make sure that peer review, although con-
ducted by the medical staff, is nonetheless
effective. In an action brought by a plaintiff
who is harmed by Doctor X, the plaintiff’s
lawyer requests a history of incidents involv-
ing Doctor X. The hospital attempts to
fight such a subpoena arguing that any peer review
material is exempt from discovery under
state law. The plaintiff counters by offering
that the information sought is not sought for
the purpose of proving anything against Doc-
tor X, but rather to ascertain the hospital’s
culpability for having Doctor X available,
on-staff and on-call. There is no guarantee
that such information could not be discov-
ered, and that it could not form the basis
for an action against the board, and its D&O
coverage. Or, worse, what if the D&O carrier
finds the board’s continued failure to provide
effective oversight to the peer review process
as grossly negligent and refuses to provide
coverage for damages awarded to the plain-
tiff against the board, and the board is there-
fore personally liable. The factual scenario
could become particularly alarming in light
of any testimony of hospital personnel who
identify facts indicating the lack of congru-
ent quality processes and the integration of
clearly defined quality information.

Regulatory Costs from Poor Quality

The federal government has become in-
creasingly engaged in regulatory efforts to
force health care to improve quality. One dra-
matic example is the current approach of the
US Department of Justice to review medical
error allegations by whistleblowers and oth-
ers, looking for cases against hospitals that
would make good cases for claims of vio-
lations of the False Claims Act for inade-
quate quality of care. The Bureau of National
Affairs’ Health Law Reporter published a

“Lead Report” in July 2003 that acute care
hospitals may see fraudulent billing suits
over systematic medical errors. This legal
type theory has been used successfully as a qual-
ity theory pioneered in many nursing home
cases by the US Attorney’s Office. These
would be cases in which hospitals demon-
strated patterns of poor care and continuing
incidents in which there is billing for ser-
dices when the organization fails to have an
adequate remedial system to reduce such er-
rors. It is important to note that the report
of this review of claims for medical errors
discusses the approach of the IOM report on
medical error. Apparently, prosecutors will
focus on patient injury and not on systems
failures that do not cause injury. However,
the IOM report makes clear that a compre-
hensive patient safety system must track both
bad outcomes and near misses.

Another more traditional example of pay-
ing regulatory fines for poor quality is caused
by the quality category of overuse. Unnec-
essary treatments and procedures have led to
numerous claims for civil and even criminal
prosecution, with huge payments of settle-
ments and legal expenses.

Of course, such regulatory investigations
and allegations, much less the devastation if
such cases were tried, result in the erosion of
confidence in health care in general and in the
public perception of specific organizations.

Financial Incentives

Several observations regarding the rapidly
evolving health care environment are criti-
cal to putting these quality challenges into
proper perspective for hospitals committed
to thriving. First, the most recent report of
the IOM titled Leadership by Example: Co-
dordinating Government Roles in Improving
Healthcare Quality,43 clearly establishes the
agenda of the federal government to develop
clinical performance measures for comparative analysis of hospitals to be regularly published for the public, similar to the recent nursing home/long-term care facilities measures. Second, recent pronouncements by Thomas Scully, Administrator of the Centers for Medicare and Medicaid Services (CMS), clearly state the federal agenda to pay more money to hospitals that provide quality care based on developed criteria.

A variety of financial incentive programs to induce both physicians and patients to become actively engaged in endeavors to improve quality of care are now being piloted in the United States. Employer groups, such as General Electric Company (GE), Ford Motor Company, Verizon Communications, United Parcel Service, and Proctor & Gamble are launching pilot programs to pay bonuses to physicians of up to 10 percent in selected cities if they prove they are taking better care of cardiovascular and diabetes patients. The leader for health care initiatives at GE attributes the bonus programs to the alarming rates of medical error and studies of quality problems in health care, citing recent studies that indicate 70 percent of diabetic patients do not get care meeting standards of the American Diabetic Association, which can lead to serious health complications. Online interactive tools for the patient to enter data about their hemoglobin levels and medication compliance can be used for such chronically ill patients to earn “CareReward” points for following doctors’ orders between office visits. These points can be redeemed not as cash bonuses but for merchandise coupons, time off from work, and other perks.

Doctors in such bonus programs would receive a yearly cash bonus of $100 for each patient covered by a participating employer if their practices have a high percentage of diabetic patients whose blood pressure, blood sugar, and lipid levels are sufficiently measured and controlled. Estimated savings from the program are $350 per diabetic patient per year, with employers’ cost of no more than $175 per diabetic patient annually.

The “Bridges of Excellence” program is a “pay for performance” movement, with Integrated Healthcare Association expecting to make bonus payments to physicians in California next year that could exceed $100 million. In Boston, a third example of financial incentives is the Partners Healthcare System, in which physicians will get bonuses of $55 per patient annually for investing in systems, such as computer-based medical records and care-management software programs for chronically ill patients. The Leapfrog Group and the Robert Wood Johnson Foundation are also reported to be evaluating pay for performance pilot projects.

In an article summarizing and analyzing case studies investigating the business case for quality improvements discussed later in this article, the nationally renowned authors comment on the “perverse” health care payment system that fails to pay for quality while paying for defects, as follows: “In effect, the rewards in the payment system are perverse; ordinary, even defective care, receives the same payment as optimal care.” They go on to state: “To overcome these barriers [to achieving quality], perverse reimbursements for care need to be designed out of the system.”

Increased Profit Margins from Effectiveness and Efficiency

Many of our initial consulting engagements in the 1980s were from overuse of services, such as unnecessary spine surgery, carotid endarterectomies, coronary angiography and revascularization procedures, and
unnecessary cesarean sections. These costs affected the payers of health care, while generating revenue for hospitals and physicians. In capitated arrangements, however, these problems present real opportunities for quality improvement with financial gains. At Stanford University School of Medicine, physician-directed institutional peer review, coupled with positive physician feedback, decreased morbidity and mortality rates associated with carotid endarterectomy while decreasing total cost of the procedure by 28 percent. Peer review processes such as described by Stanford are essential to boards, senior management, and medical staffs in breakthrough improvements in health care quality in the United States.

More recent experiences have focused on reducing length of stay, where overuse has not only cost the health care organization and payers significant money but subjected patients to unreasonable and unnecessary risk of harm. Examples of such overuse include upper and lower gastrointestinal endoscopy when patients do not have valid indications, delays in discharge from incidental findings of enlarged prostates for prostatectomy workup, and extensive spine surgeries with instrumentation when minimally invasive surgeries are clinically indicated.

QualVal’s experience with underuse, in the deterioration of documentation and performance of adequate patient histories and physical examinations, has been most dramatic and disconcerting in recent years. Underuse of recognized and evidence-based procedures in the emergency department to institute timely reperfusion techniques in acute coronary syndrome and appropriate medication for stroke within appropriate time parameters are unfortunate and frequent findings in our engagements, as examples. Failures to respond to and treat presenting conditions such as anemia are not uncommon. In both the inpatient and outpatient settings, however, the most common example of underuse is failure to follow up on abnormal laboratory studies.

Developing diagnostic and treatment plans based on evidence-based medicine and monitoring quality to track effective and efficient implementation of those plans is the future for this element of the quality-cost proposition. A particularly striking example of such an opportunity is illustrated in the work of Stanley W. Dziuban, Jr., MD, and his colleagues at St. Peter’s Hospital in Albany, New York. The published NY risk-adjusted data showed a higher than expected surgical mortality in cardiac operations for this institution. Initial medical record reviews failed to identify any quality of care problems. Statistical analysis was more revealing and localized the excess mortality to patients having high acuity, emergency coronary artery bypass grafting (CABG). These outcomes were remarkably different from the non-emergent patients who were stabilized prior to surgery. The staff instituted a focused effort to optimize the management of these emergency CABG patients. The result was zero mortality for emergency CABG during the following year, down from the hospital’s actual mortality of 4.6 percent, which had been third highest in the state (expected mortality for this facility was low at 2.1 percent, the second lowest in the state for the subject year, resulting in the conclusion of high mortality with low-risk cases).

Joseph P. Newhouse correctly states in his consideration of the barriers that result in a “quality chasm”:

Greater use of information technology can help; if a patient’s medical history and all available test and medication data were
The national agenda for implementing quality improvement in health care and the methodology to measure quality have been clearly established by the IOM and related entities. After a careful review of the collection of reports from the IOM, including the roundtable quality studies, it is certain that the IOM is recommending a two-pronged approach to the solution to errors in health care and improving patient safety:

1. Selection of appropriate treatment plans rooted in evidence-based medicine; and
2. Monitoring proper and safe implementation once the right performance standard is selected.

Current Quality-Cost Research

A recent edition of Health Affairs was devoted to "Quality: Where Is The Incentive?" with the lead article by Donald M. Berwick, MD, Sheila Leatherman, and their associates titled "The Business Case for Quality: Case Studies and an Analysis." It summarized the findings of four case studies of seven funded in part by the Commonwealth Fund. The operational definition of the term "business case" was specifically stated as follows:

A business case for a health care improvement intervention exists if the entity that invests in the intervention realizes a financial return on its investment in a reasonable time frame, using a reasonable rate of discounting. This may be realized as "bankable dollars" (profit), a reduction in losses for a given program or population, or avoided costs. In addition, the business case may exist if the investing entity believes that a positive indirect effect on organizational function and sustainability will accrue within a reasonable time frame.

The authors make a distinction between a business case, an economic case, and the social case for a quality improvement. In the economic case, financial benefits to the investor occur "more than several years later." The social case is essentially professional responsibility in the traditional definition of placing the interests of the patient above financial interests.

Indeed, the studies selected for research funding are in and of themselves fascinating, with selection criteria summarized in the article as "Study Methods: Basic Project Design." The seven topics selected for case studies were as follows:

1. Management of high-cost pharmaceuticals (low molecular weight heparin (LMWH) and statins);
2. Chronic care (diabetes management);
3. Management of encounters (drop-in group medical appointments);
4. Prevention (smoking cessation);
5. Health maintenance (wellness programs in the workplace);
6. Hospital contracting (selective referral to high-volume facilities); and
7. Medical error reduction (computerized physician order entry, or CPOE, for medications).

As the authors state: "Most of these interventions reflect attempts to correct underuse of effective care processes, rather than to reduce overuse or misuse." When the representatives of health care quality have
funds available to research this most important and compelling topic of the relationship between quality and cost, review of the medical literature, such as the studies cited previously considering underuse, overuse, and misuse, would mandate very different case studies in most instances. Clearly, the savings from improved efficiencies of care from eliminating or significantly reducing unnecessary medical care, subjecting the patient to unreasonable harm, and the reduction of misuse and avoidable complications and their direct and indirect costs, would be far more significant studies even if more politically dangerous.

*The Wall Street Journal* story commenting on this article concluded from reading the case studies and the authors’ summary of these studies: “[T]he business case for quality is ‘weak or nonexistent’ in health care . . .”51 This perception of the case studies is particularly tragic in the context of the stated position of these distinguished authors regarding motivation for quality improvement: “Without a business case for quality, we think it unlikely that the private sector will move quickly and reliably to widely adopt proven quality improvements.”52

The most compelling case study summarized in this *Health Affairs* article is the study of the management of high-cost pharmaceuticals at the Henry Ford Health System in Detroit. The study reports that in the first six months of the study year 2001, only 29 of a cohort of 500 potentially eligible patients were put on the LMWH protocol. LMWH, for the purpose of this study, was to treat deep vein thrombosis (DVT), a condition accounting for approximately 300,000 hospitalizations annually. Even though the cost of LMWH exceeds the cost of the most commonly prescribed alternative by approximately $45 to $49 per day:

- Its proper use reduces hospitalizations because it can be provided on an outpatient basis;
- It diminishes the need for laboratory testing;
- It shortens lengths of stay for hospitalized patients; and
- It reduces the overall costs by approximately $800 per patient.

The potential savings at Henry Ford Health System from this LMWH protocol was $360,000 per year, and it is significant that some of the eligible patients are in its own capitated health plan. It is further important to note that another companion finding from the case study was that there was contemporaneous use of LMWH in patients for whom it was not clinically approved (overuse).53

The significant finding of the study, from the perspective of our analysis, is stated in the summary conclusions from the findings of this study, as follows:

> [A]t Henry Ford, harvesting the potential of LMWH or lipid management proved very difficult (at least in the early stages) in the face of *barriers in organizational culture*, communication, and habit. Poor implementation of a potentially effective innovation is not a business-case problem; it is a management problem, although an outsider may have a hard time telling the difference.54 (Emphasis added.)

It is clear from this study and others, as well as the experience of the authors, that the barriers to quality from organizational structure and culture cannot be overcome by piecemeal quality and risk reduction
strategies. It is equally clear that physician autonomy, as the barrier to efficient and effective medical care, as well as patient safety cannot continue to be acknowledged but ignored. At the recent Harvard Quality Colloquium held in Cambridge, Massachusetts, one of the physician participants stated his opinion that the root cause of the current health care quality dilemma is that medicine is “eminence-based, not evidence-based.” These barriers will be discussed in detail later in this article.

However, before leaving the consideration of the business case for quality, the definition presented previously must be considered as to its validity and relevance to the current discussion of the quality-value proposition. Harvey V. Fineberg, MD, PhD, president of the Institute of Medicine, does not include the restrictive time constraint on the definition of business case. Indeed, such a short-term restriction on return on investment is inconsistent with many of the initiatives to measure performance for payment mechanisms to discriminate between quality and disquality care. For example, Arnold Milstein, MD, medical director of the Pacific Business Group on Health and a co-founder of the Leapfrog Group, believes that future payment incentives will be based on longitudinal measures of health care quality rather than fixed, isolated points of specific services.

Those of us who work in health care software development endeavors know that there are a number of different approaches and formulas used to determine return on investment. Some examples are the business value index, scorecard economics, performance management scorecard, total economic impact, and total value of opportunity. A more carefully designed approach to return on investment will be essential in future research and demonstration projects to build the statistical business case for quality.

Fundamental Causes of the Quality Dilemma

Health care quality initiatives and risk reduction strategies are not new in the United States. Indeed, after 10 years of impressive endeavors to implement continuous quality improvement in health care through the Institute for Healthcare Improvement, its leader reported at its 10th anniversary annual meeting that despite these efforts, essentially no progress toward improving quality had been achieved. In addition, after years of very ambitious and well-conceived proactive risk reduction strategies by MMI medical malpractice insurance company, the company was purchased by St. Paul Insurance Company and fell victim to St. Paul’s decision to exit the malpractice market completely.

There are two formidable obstacles to hospitals moving from this condition to the inevitable, optimal business model: (1) hospitals do not have the organizational structure to maximize and realize their potential as businesses; and (2) hospitals do not see the quality of their product, health care, as their fundamental business strategy.

The fundamental flaw in the existing organizational structure of hospitals exists in the form of interdependent yet independent and discordant relationships between the hospital boards of trustees and the medical staffs. The unquestionable result of this flaw, no matter how the health care organization is structured, is the type of barriers in organizational culture encountered and reported in the case study at Henry Ford Health System, as discussed previously. The solution must
correct the fundamental structural flaw and bring boundary management to the cultural divergence. Martin Merry, MD, describes the cultures of the board and medical staff as “silos.” We propose that Merry’s concept of silos is correct, and we believe that health care culture traditionally encounters obstacles to promoting quality in hospitals when the various existing “cultures” are understood in terms of the following three silos:

1. Organizational culture (our structural silos);
2. Professional cultures (our professional silos, including Merry’s third “culture of blame, it’s someone else’s responsibility” silo); and
3. Fragmented quality information culture (our informational silos).

An organizational diagram of existing board-medical staff relationships, shown in Figure 6, can best visualize the first two silos:

Figure 6. Structural Silos of Organizational Culture

Source: Adapted from Martin Merry.
do legislators. The aspirations of our profession would be better served if we set our standards of self-regulation unimpeachably high.58

Understanding why there is a quality problem in developing a solution (or at least parts of a solution) at the hospital level requires an appreciation of stressors on the ability of the underlying, traditionally independent medical staff’s ability to apply correction. In examining the stressors affecting the medical staff’s ability to implement modern quality measures, we are forced to ask the following questions: (1) is it likely that they will be able to overcome such difficulties; and (2) whether the board, under the current “delegated quality” model, is able to assist the medical staff in overcoming these quality hurdles.

Recognition of these two silos and the inherent solutions does not mean that the medical staff is excluded from the quality improvement and risk reduction processes. Rather, the medical staff is supported in its role by the board, and the board is supported in its role by the medical staff. In other words, there is an integration of efforts. This approach further supports the current quality philosophy focusing measurement and improvement on systems, inherently including a multidisciplinary architecture. Physicians and the medical staff should not be blamed for defects or deficiencies in clinical processes or emerging from non-physician clinical professionals or from physical facility or equipment over whom/which they have no control. The medical staff should not be treated as a source of the problem; rather, the medical staff should be engaged as a victim of a structure that gives it the misapprehension that it is solely responsible for quality.

Without such a process, quality enhancement efforts take on a “band aid” approach.

The informational silo resulting from fragmented quality information is best considered and understood in the context of Figure 7, illustrating all of the disparate sources of clinical quality data and information in hospitals. Quality data and information are developed in a wide variety of contexts, using different methodologies to collect different data for different purposes by a variety of different professionals frequently reporting to different senior managers. As a result, quality information has become extremely fragmented and is not integrated for clinical quality insight, decisions, and is not coordinated with organizational strategic planning. The diagram in Figure 7 shows some of these disparate sources of quality data.

It can be argued that this third quality information silo is simply a manifestation of the first two silos. However, the reality is that these fragmented and disparate data sources have evolved from various well-intended quality initiatives propounded from within the quality and risk management professional community and adopted for separate JCAHO standards. The data and the processes generating the data have rarely been integrated, and data remains data rather than being transformed into information and knowledge on which the organization can act meaningfully and insightfully to improve quality and to reduce risk of patient harm.

A complete consideration of these three silos is thoroughly detailed in another recent article.59 The solution proposed must first address the organizational flaw of the structural silo and the professional silo, augmented by integrated and enhanced quality and patient safety information formatted for the
The Basis for Solutions to Achieve Quality While Reducing Costs

The basis for solutions to achieve consistently high quality, error-free health care must be founded on recognition and understanding of the fundamental flaws from the three silos of structure, function, and information. These three categories of impediments to health care quality and patient safety have sub-categories of root causes, which are summarized in Figure 8.

The reason quality improvement and risk reduction strategies have failed in the past is that there has been no recognition and understanding of these root causes of the quality and safety challenges. Any efforts to rapidly change these dynamics must focus on these multi-factorial elements for a meaningful and successful solution.
A primary obstacle to making quality a driving business strategy is that there are many constituencies in health care, and whenever there is a financial incentive for one or several constituent(s) there is almost always a negative effect on another or other constituencies. What is good for physicians may not be good for hospitals, and what is in the best interests of patients may not be in the best interests of payers. These financial incentives and disincentives become very convoluted between and even among the various parties in what should be a simple and straightforward business proposition.

US medicine, with its exceptionally well-trained and devoted physicians and clinicians, and with all of its technology and innovations, is without parallel in the world. Yet, the quality of health care in the United States has become the subject of intense controversy in recent years. The disparity between these two realities results from inconsistencies in care, not from potential capability. Quality, in so many ways and throughout industries and businesses, is about consistency, reducing "defects" and variability in systems and processes. However, unlike so many other industries in which there are other outside mechanisms in place to support internal endeavors to reduce error, focusing on only the systems and processes and not on the people dynamic will
not totally solve the problems. For example, in the oft cited airline industry with its no blame approach to errors and near misses, physicians and clinicians do not get into simulators to receive clinical privileges, are not required to train in approved learning situations to undertake new procedures with new equipment, do not go through rigorous checklists to perform their tasks, and do not surrender investigation of accidents to a federal agency of outside experts.

We recently sat with a former CEO of several major hospital corporations during a distinguished career. The topic was to probe the incentives for health care organizations to undertake quality improvement and risk reduction programs from a new and compelling perspective. The response, while devastating and alarming, seems to be true—“there isn’t enough pain.” It is truly apparent that hospital administrators, financial officers board members, and medical staff leadership do not routinely do two things: (1) relate quality to finance; and (2) appreciate the intra-hospital structural problems that impede quality attainment. Thus, the business case for quality—the return on investment from quality improvement and patient safety—is neither understood nor embraced.

The pressures on payers and employers, including the federal government, will inevitably result in pressures on health care providers to measure performance to achieve marketplace position for payment based on quality. Many in health care mistakenly believe that this is just another threat that will not achieve fruition. However, recent presentations on efforts of payers and particularly

Figure 9. Six Sigma Diagram of Costs of Disquality to an Employer

Source: Francois de Brantes, General Electric.
employers demonstrate that this pressure is eminent in certain markets. The pressures in some markets from the Leapfrog Group should be noted. A recent presentation from GE, however, elevates the need for health care organizations to understand how these pressures will become manifest.

As an employer, GE has evaluated the opportunities for savings on health care expenditures in a familiar Six Sigma graphic fashion (shown in Figure 9).

GE studied public accessible databases to evaluate the efficiency and effectiveness of hospitals in specific areas. It compared this evaluation with where its employees receive care and determined that the most effective and efficient hospitals were not the hospitals where most of its employees were receiving care. This information is presented as “bubble charts” in Figure 10.

The bubbles centered around zero percent represent hospitals demonstrating effectiveness as determined from actual vs. expected mortality or complications. These were determined as the most effective hospitals in these selected regions. The numbers in the other bubbles as compared to these most effective hospitals demonstrate that the GE employees go to other hospitals rather than these hospitals in each region. Based on these determinations, GE will attempt to influence its employees in selected regions to select the

Figure 10. Employer Determinations of Hospitals Demonstrating Efficiency and Effectiveness vs. Where Their Employees Are Receiving Health Care

In Erie and the Capital District, we found a hospital that delivers both effective and efficient cardiac care.

And the same was true for Louisville and Lexington...and should be true for most markets with competing hospitals.

Source: Francois de Brantes, General Electric.
most effective hospitals by having a small or no co-pay for the effective hospitals vs. large co-pay for relatively ineffective hospitals.

This approach from employers, as well as the federal initiative to develop performance measures to be implemented by CMS, should alert health care providers that there is an absolute imperative to become involved immediately in the analysis of health care quality information and to restructure to eliminate the impediments to quality from organizational structure and culture. This will further demand integrated quality data for consideration at the board level quality committee. Competitive health care organizations will not wait for these external forces to compel these recommendations. Astute organizations will want to become involved in the formulation of performance measures, as well as in the organizational imperatives to transform to a quality-value business strategy.

Long term, the solutions will come from a four-pronged approach that the authors describe as having the following elements and term “QReview”:

- Prospective design of systems to provide effective, efficient, and safe health care processes premised on evidence-based best practice models using process modeling and FMEA;
- Concurrent monitoring to be certain that the correct health care protocol has been

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**Figure 11. Incremental Opportunities on the Health Care Continuum for Financial Incentives to Influence Patient Decisions**

- Enroll in medical plan
- Smoking Penalty, Health Spending Account, CarePoints, Co-Pay Differences
- Stay Healthy
- Select Doc
- Decide on Treatment
- Select Specialist or Hospital
- Health, Productivity, Return to Work
- Prevention Guidelines, HEDIS Scores
- Bridges to Excellence
- Expert Medical Opinion Disease Management
- Bridges to Excellence Leapfrog NQF
- Cardiac, Diabetes, Systems of Care
- Regional Centers of Quality

*Source: Francois de Brantes, General Electric.*
selected and is being implemented for each patient;
- Retrospective assessment of integrated quality, risk, and clinical performance information databases; and
- Quality, risk, and clinical performance information feedback loops to continuously learn from clinical experience and to integrate new experiential and research information into continuous prospective design.

It will be important for health care organizations to consider the same points along the continuum of care for quality interventions and opportunities to implement quality initiatives that employers are using to consider intervention strategies. An example of such intervention points is shown in Figure 11.

The dotted box shows prevention, physician selection, treatment decisions, selection of specialists and hospitals, and health status/return to work as the key intervention points along this continuum of care.

In the short and immediate term, the solutions must immediately focus on the retrospective and then rapidly move to concurrent elements of this formula. These immediate solutions will require:

- Creating board level, multi-disciplinary quality and safety committees with board level commitment to improving quality and patient safety and restructuring beyond simple restructuring efforts now underway in many organizations;
- Providing integrated quality and risk information to these entities with commitment of resources from senior management;
- Training of board members to interpret and understand quality and risk data with the same level of sophistication as they review audited financial information and to understand interventions and monitoring available to them for solutions to defects in the system;
- Addressing the cultural impediments inculcated into the silos and addressing the hard issue of physician expectations of independence and autonomy and the expectations of boards and senior management that the doctors will handle the quality; and
- Moving to organizations that devote significant resources to quality and safety and to the development of predetermined and monitored systems and processes of care, far beyond the isolated and piloted protocols for several chronic conditions.

The simple but compelling thesis of the authors is that health care must immediately engage in the transformation to making quality of medical care the fundamental business strategy of the organization.

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