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Health Policy Brief

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Improving Quality and Safety. Despite some progress, the nation still faces an urgent need to build a less error-prone system that delivers better care.

WHAT'S THE ISSUE?

A shocking reality is that although the US spends more than any other nation per person on health care, the quality of care provided frequently falls far short of what is optimal.

More than a decade ago, the Institute of Medicine (IOM), an arm of the National Academies, published two major reports identifying significant and widespread deficiencies in the quality of US health care.

Among the most startling of the institute's findings was that preventable medical errors caused an estimated 44,000–98,000 inpatient hospital deaths per year. The IOM also found that US health care was insufficiently safe, effective, patient-centered, efficient, timely, or equitable (devoid of disparities related to race or ethnicity).

Since then, major efforts have been undertaken to better define *health care quality*, identify the most meaningful ways to measure it, and determine how best to improve and increase access to it. The latest research reveals that some progress has been made, yet there is still a considerable distance to go.

The cost in human life or reduced health exacted by medical errors and quality shortfalls is the most pressing reason to push forward, but the need to control ever-escalating health costs confers additional urgency. This policy

brief explains how health care quality is commonly defined, examines the issues around measuring it, highlights some recent findings on quality improvement efforts, and discusses key challenges ahead.

WHAT'S THE BACKGROUND?

As the IOM's reports suggested, "quality" in health care is a multidimensional concept that includes aspects of health care beyond how safe it is for patients. However, in recent years, the topic of safety has received a good deal of attention. On average, for example, one in seven Medicare beneficiaries is harmed annually in the course of care, at a cost to the government estimated at \$4.4 billion.

A SOBERING PICTURE: The first Harvard Medical Practice Study, published in 1991, presented a sobering picture of the quality of US health care as measured through adverse events, which are injuries caused by medical management, rather than by an underlying disease or condition. Adverse events can be due to errors or to negligence, which is improper, unskilled, or substandard treatment of a patient by a health care professional.

The Harvard study found that in 1984, adverse events occurred in 3.7 percent of hospitalizations among more than 30,000 patients in New York State; 13.6 percent of these events resulted in death, and 2.6 percent led to permanent total disability.

\$4.4 billion

Annual cost of harm

On average, 1 in 7 Medicare beneficiaries is harmed during care, costing the federal government \$4.4 billion annually.

“Some progress has been made, yet there is still a considerable distance to go.”

The IOM, in its landmark study *To Err Is Human: Building a Safer Health System* (2000), extrapolated from the Harvard report and a similar study conducted in Colorado and Utah and estimated that 44,000–98,000 annual hospital deaths occurred nationwide as a result of medical errors.

The following year, the IOM published *Crossing the Quality Chasm: A New Health System for the 21st Century*, which found US health care falling short across the six dimensions cited above. In 2003, Elizabeth McGlynn and colleagues published a study in *The New England Journal of Medicine* showing that US adults on average received only 54.9 percent of recommended care. Whether due to commission (medical errors) or omission (negligent or suboptimal care), quality problems increase rates of injury, morbidity, and mortality, and inflate health care costs.

DEFINING QUALITY CARE: The IOM’s definition of *high-quality care*—care that is safe, effective, patient-centered, timely, efficient, and equitable (with no disparities between racial or ethnic groups)—has been widely adopted since its publication. The institute recommended addressing quality improvements at four levels: that of the patient; health-delivery “microsystems,” such as a surgical team or acute-care unit; organizations that house such microsystems, such as hospitals and health systems; and the regulatory and financial environment in which those organizations operate.

The IOM recommended that quality improvements be focused in 20 areas, including diabetes, care coordination of multiple chronic conditions, major depression, and pain control in advanced cancer. Improvements in these areas were judged to have the greatest potential for reducing rates of disability and premature mortality, for incorporating diverse patient groups, and for improving practice.

The National Committee for Quality Assurance, founded in 1990, has also made significant contributions to the national quality discussion. Its Healthcare Effectiveness and Data Information Set standards are widely used by health plans to track quality and service. Its 2010 report recommends greater use of screening and preventive measures, such as colorectal screening, flu shots, and medical assistance with smoking cessation. The report also emphasizes that better management of chronic diseases such as diabetes, asthma,

and heart disease will become ever more critical as the US population ages.

NATIONAL QUALITY FORUM: Major strides in advancing the quality agenda have come under the aegis of the National Quality Forum (NQF), a nonprofit organization that was formed at the recommendation of the President’s Advisory Commission on Consumer Protection and Quality in the Health Care Industry in 1998. Following a lengthy review of the issues, the commission recommended the creation of a private-sector entity that would bring health care stakeholders together to standardize health care performance measures.

Since then, the NQF has certified 34 separate health care practices and procedures to be effective in reducing the occurrence of adverse events. A National Priorities Partnership convened by the NQF has issued sets of specific actions to reduce health care costs in three important areas: avoiding hospital readmissions, reducing emergency department overuse, and preventing medication errors.

Another organization that plays a critical role in quality improvement is the Joint Commission, formerly known as the Joint Commission on Accreditation of Healthcare Organizations. The commission is a private-sector, US-based nonprofit organization that operates accreditation programs for a fee to subscriber hospitals and other health care organizations.

The commission has developed National Patient Safety Goals to promote and enforce major changes in patient safety, including regulations governing such areas as central line and surgical site infections. (A central line is a catheter inserted into the chest to administer medication or drain fluids. Without proper safeguards, the catheter can introduce infectious bacteria or fungi into the body, resulting in frequently devastating and sometimes fatal bloodstream infections.)

QUALITY IMPROVEMENT INITIATIVES: Following on suggestions made by the Institute of Medicine, the National Committee for Quality Assurance, and other organizations, a number of quality improvement efforts have been undertaken or reinvigorated. Some of them include:

- **The 100,000 Lives Campaign.** The Institute for Healthcare Improvement, a private, nonprofit organization based in Cambridge,

54.9%

Care received

US adults received only 54.9 percent of the care that had been recommended to them, a 2003 study found.

Massachusetts, began an 18-month initiative in 2005 to support hospitals in implementing practices proven to reduce mortality rates. It enrolled more than 3,000 hospitals and exceeded its goal of saving 100,000 lives by 20 percent during that time.

- Protecting 5 Million Lives from Harm.** Following the success of the 100,000 Lives Campaign, the Institute for Healthcare Improvement sought to reduce patient injuries caused by inappropriate or insufficient medical care. The campaign involved more than 4,000 hospitals during its two-year run from December 2006 to December 2008. Among its many successes, 65 hospitals reported going a year or more without a single instance of ventilator-associated pneumonia, and 35 went a year or more without a central line–associated bloodstream infection in at least one of their intensive care units.

- Michigan Regional Collaborative Improvement Program.** Led by Blue Cross Blue Shield of Michigan, this program improved outcomes for several serious conditions and reduced costs during 2005–09. Complications from general and vascular surgery alone dropped by about 2.5 percentage points, resulting in 2,500 fewer patients annually with surgical complications (Exhibit 1). Overall, the collaborative has saved about \$20 million a year in payer costs.

- Comprehensive Unit-based Safety Program (CUSP).** Each year, more than 80,000 central line–associated bloodstream

infections occur, resulting in approximately 28,000 deaths. Practices developed by Peter J. Pronovost and colleagues at Johns Hopkins University resulted in sustained reductions in central line–associated bloodstream infections in the Michigan hospitals where they were tested. The CUSP program includes a five-step checklist supported by comprehensive training to create a safety-focused culture. More than 1,000 hospitals in 45 states have now signed on to the program.

- Aligning Forces for Quality Initiative.** This multiphase project, sponsored by the Robert Wood Johnson Foundation in 17 communities nationwide, focuses on improving health care quality, measuring and reporting performance, helping consumers to manage and make informed decisions about their health care, and reducing disparities in care delivery to different racial, ethnic, and socioeconomic groups. Efforts by clinics in Minnesota resulted in nearly 10,000 more diabetes patients' meeting evidence-based treatment goals in 2009 than in 2007.

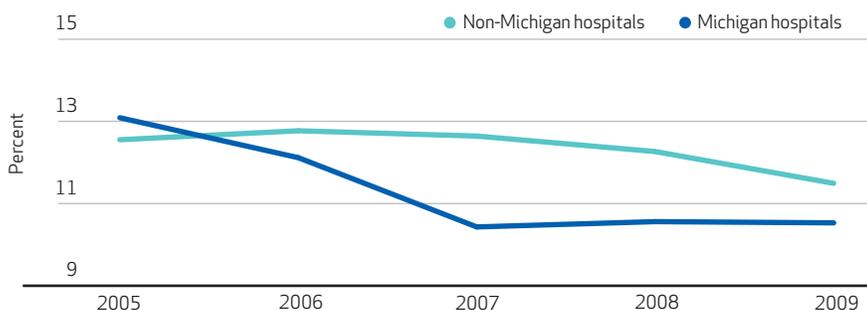
- Other private-sector improvements and efforts.** In an April 2011 article published in *Health Affairs*, Mark R. Chassin and Jerod M. Loeb of the Joint Commission posited that the US health care system has “pockets of excellence” where specific measures and particular facilities have achieved high levels of safety and efficacy. In 2009, for instance, US hospitals provided life-prolonging beta-blockers to heart attack patients 98 percent of the time.

- Federal and state efforts.** Legislative and regulatory efforts to improve quality are ongoing. The Centers for Medicare and Medicaid Services (CMS) has stopped reimbursing care providers for the extra health care costs related to “never events,” such as surgeries performed on the wrong person or wrong part of the body. CMS also administers the Physician Quality Reporting System (formerly the Physician Quality Reporting Initiative), which provides incentive payments to doctors under Medicare if they report on a number of performance metrics.

Multistakeholder or public-private collaborations, such as the Hospital Quality Alliance and the AQA Alliance (formerly the Ambulatory Care Quality Alliance) have been formed to collect and report performance measurement data to consumers, physicians, and others. (Hospital Quality Alliance data are available at <http://www.hospitalcompare.hhs.gov>.)

EXHIBIT 1

Risk-Adjusted Morbidity for General and Vascular Surgery: Hospitals in Michigan Versus Hospitals Outside of Michigan, 2005–09



SOURCE DA Share, DA Campbell, N Birkmeyer, RL Prager, HS Gurm, M Moscucci, et al., “How a Regional Collaborative of Hospitals and Physicians in Michigan Cut Costs and Improved the Quality of Care,” *Health Affairs* 30, no. 4 (2011): 636–45. **NOTES** Morbidity rates declined faster in Michigan hospitals ($p < 0.001$) and, by 2009, were lower than in other hospitals participating in the National Surgical Quality Improvement Program ($p < 0.001$).

40

Wrong surgeries

About 40 surgeries are performed on the wrong patient or on the wrong side of a patient's body every week.

CMS is authorized under law to withhold a share of payments under Medicare to hospitals that do not report the data. More than half the states, including California, New Jersey, and North Carolina, also have hospital quality reporting programs in place, in most cases mandated by state legislation.

SLOW PACE OF IMPROVEMENT: Despite these efforts, quality improvement throughout much of the US health care system is still proceeding at a glacial pace, if at all. The recently published *National Healthcare Quality Report* by the Agency for Healthcare Research and Quality (AHRQ) reveals that in 2009, while nearly two-thirds of 179 measures of health care quality did show improvement, the median annual rate of change was only 2.3 percent.

Several quality measures relating to cancer screening and diabetes management actually worsened during this time, according to AHRQ. And according to the Joint Commission, approximately 40 surgeries are performed on the wrong patient or on the wrong side of a patient's body every week, despite many efforts to reduce the number of such events, such as requiring patients to sign their names ahead of surgery at the place on the body where the surgery is to be performed.

WHAT'S IN THE LAW?

Because it includes many quality-related provisions, the Affordable Care Act of 2010 is expected to jumpstart quality improvement efforts across many dimensions. A number are designed to attack the fragmented nature of US health care by improving the coordination of care for chronically ill people.

One provision of the law is an initiative to reduce 30-day hospital readmission rates and encourage hospitals and other health care providers to better coordinate the care of chronically ill patients once they are discharged from the hospital. Beginning October 1, 2012, CMS can reduce payments by 1 percent to hospitals whose readmission rates for patients with heart failure, acute myocardial infarction, or pneumonia exceed a particular target. Hospitals that achieve or exceed defined quality scores for these and other conditions can also receive financial incentives.

Another important provision in the law is the development of a National Strategy for Quality Improvement in Health Care by the US Department of Health and Human Services (HHS). The law also created new respon-

sibilities for the National Quality Forum as a consensus-based entity, including convening a multistakeholder group to provide annual input to HHS on the development of a National Quality Strategy, which was released on March 21, 2011.

The strategy sets an overall framework to improve health care quality by addressing the needs of patients, families, and communities; easing administrative burdens on care providers; and encouraging collaboration and communication among providers and between providers and their patients.

PARTNERSHIP FOR PATIENTS: On April 12, 2011, HHS announced a national initiative aimed at reducing preventable hospital-acquired conditions and complications that occur during patient transitions from one care setting to another. Called the Partnership for Patients, the \$1 billion federal initiative seeks to reduce hospital-acquired conditions by 40 percent by 2014. Doing so would result in about 1.8 million fewer injuries to patients and would save more than 60,000 lives over three years, HHS says.

The partnership also aims to reduce preventable complications during care transitions, thereby cutting hospital readmissions by 20 percent from 2010 levels. This would translate into more than 1.6 million patients' recovering from illnesses without requiring hospital readmission within 30 days of discharge. Over 10 years, these efforts could reduce Medicare and Medicaid costs by more than \$50 billion, HHS said.

The Partnership for Patients has already attracted the commitment of more than 500 hospitals, physicians, nurses, and other groups. HHS will provide \$500 million through the Community Based Care Transition Program to support demonstration projects aimed at reducing transition complications. Up to \$500 million more through the Center for Medicare and Medicaid Innovation will support demonstrations aimed at reducing hospital-acquired conditions, such as bloodstream infections or pressure ulcers. Funding for both is provided by the Affordable Care Act.

ADDITIONAL INCENTIVES: Under the Affordable Care Act, a number of additional initiatives designed to boost quality will roll out in coming years. Pay-for-performance programs will begin in all US acute care hospitals starting in 2013. The reimbursements these hospitals receive from Medicare will partially

“Quality problems increase rates of injury, morbidity, and mortality, and inflate health care costs.”

\$1 billion

New federal initiative

The government will fund pilot studies to reduce hospital-acquired conditions by 40 percent and preventable readmissions by 20 percent by 2014.

depend on the quality scores they attain for patient care. HHS will also expand a “value-based purchasing” program for hospitals, which will reward hospitals for better care of five of the most prevalent conditions.

In the future, value-based payment strategies are to be adopted for additional providers in Medicare, including skilled nursing facilities, home health care providers, hospice care, rehabilitation hospitals, and ambulatory surgery facilities.

WHAT ARE KEY ISSUES?

There is wide agreement that the quality of the US health care system must improve. But no such consensus exists on how best to measure improvement. The nonprofit National Quality Forum has endorsed more than 500 performance metrics, including both process measures (such as level of compliance with guidelines for fighting infections) and outcome measures (such as mortality).

Stakeholders often pick and choose among multiple measures in their efforts to assess, and often to compare, the performance of hospitals, surgical units, physician practices, and individual care providers. Complicating matters further, hospitals track adverse events with different methods, leading to inconsistent reporting of results.

For instance, by using an extensive chart review methodology pioneered by the Institute for Healthcare Improvement, David C. Classen and colleagues detected at least 10 times as many serious events in hospitals compared with two commonly used measurement methods. The study, published in the April 2011 *Health Affairs*, examined the care provided at three sophisticated US hospitals with advanced patient safety programs during October 2004, and found that an adverse event was associated with one in three admissions.

Although not every patient is seriously injured or dies from adverse events, such a wide variation in measurement is highly disturbing. Pronovost of Johns Hopkins and others argue that standard surveillance systems need to be developed and employed so processes and outcomes can be accurately and fairly compared.

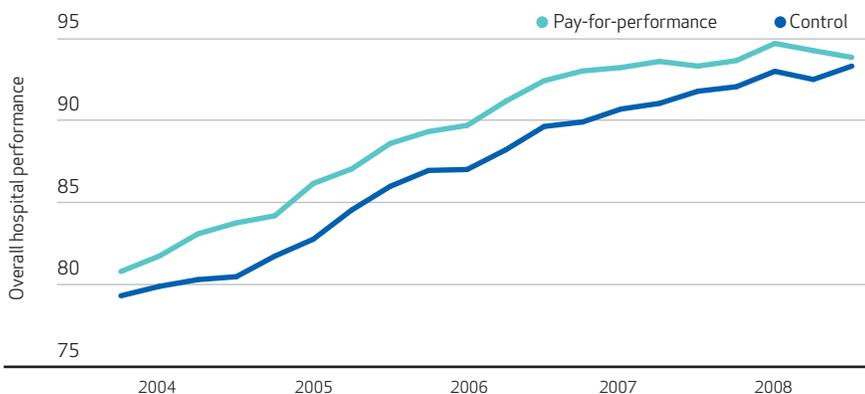
DETERMINING WHAT WORKS: There is mixed evidence on quality improvement strategies such as pay-for-performance. Rachel Werner and colleagues examined one of the largest CMS pay-for-performance demonstration projects to date, the Premier Hospital Quality Incentive Demonstration. The findings, published in the April 2011 *Health Affairs*, showed that more than half of the 260 participating hospitals attained high performance scores, compared with fewer than one-third of the hospitals in the control group. But after five years, there was little difference between the groups’ scores (Exhibit 2).

The reason, the authors suggest, is that administrators and staff at the control group of hospitals, knowing that pay-for-performance would soon be in effect, came to focus on the same quality indicators as the demonstration hospitals. The hospitals in the demonstration project that made the largest quality gains tended to be those that were eligible for bigger bonuses, had strong finances, or faced less competition. Werner and her colleagues still believe in the efficacy of pay-for-performance, but they think the greatest impact on quality will come if programs are tailored to hospitals’ specific situations.

ELIMINATING DISPARITIES: A similar story of mixed success is told by Amal Trivedi and colleagues, who examined racial disparities in the Veterans Health Administration’s performance on quality measures. The good news: gaps had narrowed substantially on process-of-care measures—for example, the percent-

EXHIBIT 2

Average Overall Performance in Pay-for-Performance and Control Hospitals, Fiscal Years 2004–08



SOURCE RM Werner, JT Kolstad, EA Stuart, and D Polsky, “The Effect of Pay-For-Performance in Hospitals: Lessons for Quality Improvement,” *Health Affairs* 30, no. 4 (2011): 690–8. **NOTES** Performance is averaged across the three conditions of acute myocardial infarction, heart failure, and pneumonia; the values shown are average composite performance scores. Difference in performance between pay-for-performance and non-pay-for-performance hospitals from the second quarter of 2004 through the fourth quarter of 2007 is statistically significant ($p < 0.05$).

\$50 billion

Medicare and Medicaid savings

Reducing hospital-acquired conditions and preventable readmissions could reduce government costs by more than \$50 billion over 10 years.

“Achieving high reliability is critical as health care grows more complex.”

age of veterans with diabetes who were given eye examinations. The bad news: there was a “striking disconnect” between performance on process measures and clinical outcomes.

Care quality was very similar for white and black patients, but disturbing gaps remained in their health outcomes, with black veterans suffering higher morbidity rates. The authors conclude that more research is needed to determine why such outcome disparities persist and how health care providers can help to reduce or eliminate them.

WHAT'S NEXT?

Many experts believe that engaging patients more fully will be critical in improving the quality of health care. As Floyd J. Fowler Jr. and colleagues write in the April 2011 *Health Affairs*, good-quality health care will be the right care that goes to the right patient at the right time, with the patient having had a prominent role in deciding what he or she wants.

Care that a fully informed patient would have turned down, had he or she fully understood the choices and consequences, is every bit as much a “medical error” as is wrong-site surgery, Fowler and colleagues argue. They propose using annual federally funded surveys conducted as part of the Consumer Assessment of Healthcare Providers and Systems to determine how fully physicians and others are engaging patients in making decisions about their health care.

The next frontier in quality improvement is “high reliability,” say Chassin and Loeb of the

Joint Commission. Health care providers must take a page from such high-reliability systems as the flight decks of aircraft carriers and other complex organizations that “establish and maintain extremely high levels of safety.” Although US health care has made progress on quality and safety, “enormous variability” remains, and patients sometimes suffer preventable injury and death, they say.

AN URGENT NECESSITY: Achieving high reliability is even more urgent in the face of the growing complexity of medical care. Those who work in high-reliability organizations recognize that even a small divergence from established safety protocols could have serious repercussions. Critical will be the use of robust process improvement tools applied to “various processes in the organization, including financial and business processes,” Chassin and Loeb write.

Among such tools are “Lean” or “Six Sigma” process improvement methodologies, which seek to identify and remove the causes of defects, inefficiencies, or errors and minimize variability in any service, manufacturing, or business process.

Experts in high-reliability systems note that such tools have been central in drastically improving the safety of activities such as aviation and air travel over the past several decades. As CMS Administrator Donald Berwick said when the Partnership for Patients was unveiled on April 12, 2011: “Commercial air travel didn’t get safer by exhorting pilots to please not crash. It got safer by designing planes and air travel systems that support pilots and others to succeed in a very, very complex environment. We can do that in healthcare, too.” ■

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