

Chapter 9: Health Care Quality

It's often said that Americans enjoy "the best health care in the world." Yet study after study shows that the quality of American health care is, at best, uneven and, in some instances, poor.¹ Public and private purchasers of health care services (i.e., employers and government programs such as Medicare and Medicaid) are focused on finding ways to both reduce health care costs and improve the quality or value of the services they buy.

- **Underuse** occurs when patients are not given care that is medically indicated. A classic example is the failure to immunize children and adolescents against preventable diseases.
- **Overuse** occurs when patients receive care that isn't medically indicated. Typical examples are use of antibiotics to treat a cold or the use of imaging devices for someone with lower back pain.
- **Misuse** describes care that is provided poorly or erroneously, such as wrong-side surgery.²

Numerous studies have evaluated the quality of American health care. These reports provide solid evidence of the performance problems in the U.S. system. They include:

- According to the IOM, medication errors harm 1.5 million Americans annually and treat-

ing injuries caused by these errors costs an estimated \$3.5 billion a year.³

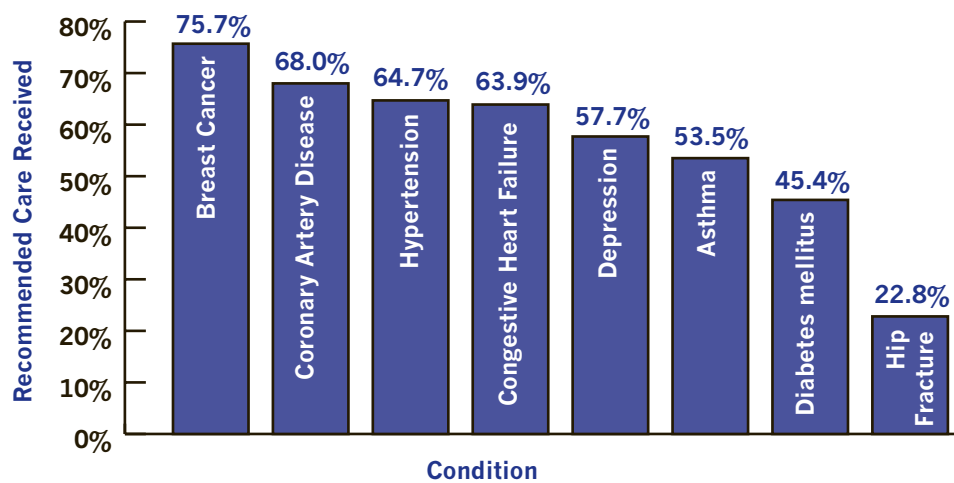
- Researchers from the RAND Corporation found that, on average, Americans receive the care indicated by medical evidence as necessary only 55 percent of the time.⁴ (See chart, "Percentage of Recommended Care Received for Selected Conditions.") In a more recent study, RAND found continuing quality gaps, regardless of differences in income, race or ethnicity, education or health insurance status.⁵
- The National Committee for Quality Assurance (NCQA) has estimated that as many as 79,000 Americans die each year because they do not receive evidence-based care for conditions such as high blood pressure, diabetes, and heart disease.⁶
- A report to Congress by the Agency for Healthcare Research and Quality (AHRQ) found that the proportion of elderly patients with pneumonia who received recommended pneumococcal screenings or vaccinations was 7.5 times lower in the lowest-performing state than in the highest-performing state.⁷
- Variations in the quality of care do not seem to be linked to how much we spend on health care.⁸

KEY FACTS

- Researchers from the RAND Corporation have found that, on average, Americans receive the care indicated by medical evidence as necessary only 55 percent of the time.^a
- The National Committee for Quality Assurance (NCQA) has estimated that as many as 79,000 Americans die each year because they do not receive evidence-based care for conditions such as high blood pressure, diabetes, and heart disease.
- The federal Centers for Medicare and Medicaid Services (CMS) is collecting 34 quality measures from a group of 200+ hospitals, paying rewards to those that score in the top 20 percent and penalizing the worst performers.^b After the first year of the program, CMS awarded \$8.9 million to hospitals that showed measurable improvements in care.^c
- Two-thirds of respondents in a 2005 Harris poll thought that the use of electronic patient records makes it more difficult to ensure patients' privacy.^d
- In 2004, President Bush set a goal of every American having an electronic health record by 2014.

For story ideas on health care quality, see page 130. A list of experts and websites also begins on page 130.

PERCENTAGE OF RECOMMENDED CARE RECEIVED FOR SELECTED CONDITIONS (1998 - 2000)



Source: McGlynn, EA; Asch, SM; Adams, J. et al (2003). "The Quality of Health Care Delivered to Adults in the United States." *New England Journal of Medicine*, June 26, 348(26):2643. (www.nejm.org)
(Eight of 25 reported conditions are shown in this graph)

Information Set (HEDIS), developed through an alliance between health care plans and employers who were frustrated by the lack of performance information.¹² HEDIS, the first version of which debuted in 1991,¹³ has evolved to include a broader range of measures that examine underuse, overuse, and misuse of services.¹⁴ And HEDIS has spawned a number of other measuring tools that are used to assess care in a variety of settings (see box, "Quality Measures").

HOW DO WE MEASURE QUALITY?

A key to evaluating and ultimately improving health care quality is measuring performance. Today there are numerous quality measures in use but there is no consensus on the best way to measure and improve quality.

The goal of most quality measurement is to improve health care services by monitoring and analyzing data and, based on what the data indicate, changing practices to improve performance.⁹ For example, research has shown that giving patients a class of drugs known as beta blockers following a heart attack significantly reduces the risk of a second and often fatal attack.¹⁰

But fewer than half of patients overall were given beta blockers after a heart attack as of mid-1996. Once researchers began to systematically measure how often patients received beta blockers after a heart attack, physicians, hospitals, and health plans put steps in place to assure a beta blocker is given to every heart attack patient and the overall use rate has improved.¹¹

One of the earliest efforts to systematically measure quality was the Health Plan Employer Data

In the past decade additional measurement sets have been developed to assess the performance of hospitals, nursing homes, home health care and, most recently, physicians. In recent years, organizations such as the National Quality Forum have been created to sort through existing quality measures and identify those that have the most relevance to purchasers, providers and consumers.¹⁵

Almost all quality measures seek to assess one of four things:

- Are the **structures** and policies in place to assure performance?
- Are the right **processes** being followed to lead to better care?
- Are the right **outcomes** being achieved?
- Are the patients **satisfied** with their care experience?

The results of these measures are often used to drive improvement in performance and quality.

HOW CAN WE IMPROVE QUALITY?

Quality improvement results from a combination of measurement, reporting and action. Health care organizations often use measurement results to

Quality Measures

Public and private sector insurers use a variety of quality measures to assess the performance of different parts of the health care system. Key measure sets are:

HEDIS. The Health Plan Employer Data Information Set was developed by a group of large employers to assess the performance of health plans. Today HEDIS is primarily used to measure the quality of care delivered by HMOs. HEDIS is maintained by the National Committee for Quality Assurance (NCQA). (www.ncqa.org/Programs/HEDIS/)

CAHPS. The Consumer Assessment of Healthcare Providers and Systems is a standardized survey of patients' experiences with care. Health care organizations, public and private purchasers, consumers, and researchers use CAHPS results to assess the patient-centeredness of care, compare and report on performance, and improve quality of care. CAHPS was developed by the Agency for Healthcare Research and Quality (AHRQ) in partnership with numerous private organizations. (www.cahps.ahrq.gov)

Hospital Compare. Medicare's voluntary hospital quality system reports how often hospitals provide recommended care for a heart attack, heart failure or pneumonia, and to prevent infections acquired during surgery. Measures were developed by the Hospital Quality Alliance (HQA) and adopted by Medicare in 2003. Hospitals that report the measures receive a full annual update in Medicare payments; those that do not lose 2 percentage points on the update. (www.hospitalcompare.hhs.gov)

Nursing Home Compare collects information on nursing home residents' health, physical functioning, mental status and general well-being using a tool known as the Minimum Data Set (MDS). (www.medicare.gov/NHCompare/home.asp)

Home Health Compare uses the Outcome and Assessment Information Set (OASIS), which is a group of data elements that represent core items of a comprehensive assessment for an adult home care patient. (www.medicare.gov/HHCompare/Home.asp)

MEDPAR. The Medicare Provider Analysis and Review (MEDPAR) File contains data from claims for services provided to beneficiaries admitted to Medicare certified inpatient hospitals and skilled nursing facilities (SNF). (www.cms.hhs.gov/IdentifiableDataFiles/05_MedicareProviderAnalysisandReviewFile.asp)

identify and target areas that need quality improvement. By comparing results to benchmarks, and making adjustments where necessary to attain benchmark goals, internal quality improvement programs can achieve significant results.

Many employers and other purchasers of health care coverage use quality measurement results to guide their choices of plans and providers. For example, two-thirds of Fortune 500 employers currently require health plans to be accredited by NCQA and/or to report HEDIS data.¹⁶ Public programs like Medicare and Medicaid either require or encourage hospitals, HMOs, nursing homes and others to report quality information.

Public release of performance information in the form of report cards and through other avenues, such as online databases, can be a powerful driver for improvement. Such information can be used by consumers to choose a plan or provider. Public disclosure of performance information drive plans

and providers to target improvements so that they look better than their competitors and can show improvement over their last scores. Evidence shows that when data are released each year over a long period of time, it stimulates improvement in those areas being measured.^{17,18}

PAYING FOR PERFORMANCE?

Despite more than a decade of investment in quality measurement, nationwide health care quality continues to lag. In recent years, public and private sector leaders have been experimenting with ways to spur improvement through incentives. Often lumped under the rubric “pay for performance” or “P4P,” these efforts range from financial bonuses to positive publicity for health care providers who excel.

Much of the momentum for P4P has come from the private sector. Bridges to Excellence (BTE), a nonprofit, employer-driven initiative, tries to improve quality through programs that recognize

Private Efforts to Improve Quality

Organization	Bridges to Excellence (BTE)	Integrated Healthcare Association (IHA)	The Leapfrog Group
Quality Measures	Physician performance. Outcomes in diabetes care, cardiovascular care and patient self-management systems	Physician performance. Three domains: technical aspects of medical care, patient experience & satisfaction, and use of information technology	Hospital performance. Self-reported data on heart bypass & coronary angioplasty surgery, treatment of heart attacks & pneumonia, and births & neonatal care
Rewards	Physicians receive bonus payments and are highlighted in directories	Includes 35,000 California doctors and in 2005, paid \$80 million in rewards	Public recognition and bonus payments

physicians who make changes that achieve better outcomes.¹⁹ BTE focuses on areas with a deep history of measurement: diabetes care, cardiovascular care, and patient self-management systems. Participating physicians receive bonus payments and are highlighted in provider directories, helping employees and their families make informed choices.²⁰

In California, the Integrated Healthcare Association (IHA) works with health plans, medical groups and independent practice associations to reward quality in three domains: clinical, patient satisfaction, and adoption and use of information technology (e.g., electronic health records or EHRs) and computer physician order entry (CPOE) by practitioners.²¹ To avoid antitrust problems, rewards are established by each insurer based on performance rather than by IHA. Currently, 35,000 California doctors—responsible for 6.2 million patients per year—are involved in the program.²² In 2005, IHA paid out an estimated \$80 million in rewards.²³

A similar organization, the Leapfrog Group, rewards hospital performance via public recognition and bonus payments to hospitals that report data in several areas of patient care—heart bypass and coronary angioplasty surgery, treatment of heart attacks and pneumonia, and births and neonatal care.²⁴ These areas account for 20 percent of commercial inpatient spending and 33 percent of commercial admissions.²⁵ (See chart, “Private Efforts to Improve Quality.”)

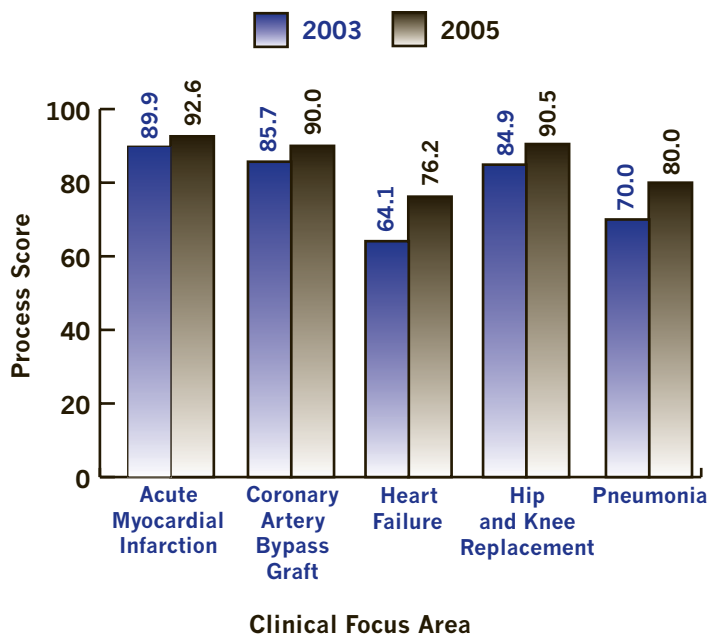
Such private sector efforts have spurred interest in P4P in Congress and the Administration. The Medicare Modernization Act of 2003 authorized several P4P efforts including:

Hospitals - Medicare now ties the annual increase in Medicare hospital payment rates to hospitals’ participation in a “voluntary” quality reporting program that has nearly universal participation.²⁶ In 2005, Congress passed the Deficit Reduction Act, which increases the penalty for nonparticipation and directs the Centers for Medicare & Medicaid Services (CMS) to develop a program to tie payment to actual performance (instead of simply reporting). In a limited demonstration that began in March 2003, CMS also is collecting 34 quality measures and paying rewards to Premier hospitals that score in the top 20 percent of those participating. The worst performers are penalized.^{27,28} After the first year of the program, CMS awarded \$8.9 million to hospitals that showed measurable improvements in care.²⁹ (See chart, “Premier Demonstration Results.”)

Doctors - A three-year CMS demonstration program known as Doctors’ Office Quality (DOQ) focusing on chronic conditions is designed to develop and test a quality measurement program for physicians.³⁰ A second project, DOQ-IT, will promote the adoption of information technology use by physicians.³¹

Interest in P4P continues to grow. In the 109th Congress, Senators Charles Grassley (R-Iowa) and Max Baucus (D-Mont.) – both senior members of the

PREMIER DEMONSTRATION RESULTS: PROCESS IMPROVEMENT OF FIVE CLINICAL AREAS, 2003-2005



Source: Premier, Inc. (2005). "Groundbreaking Pay for Performance Project Reports Quality of Care Improvement at Participating Hospitals." News release, May 3.

IMPROVING PATIENT SAFETY

Patient safety is an essential component of health care quality. A 1999 report by the federally chartered Institute of Medicine (IOM) estimated that as many as 98,000 Americans die each year as a result of avoidable patient safety errors.³³ That report, along with others, helped spur a national debate over how to reduce errors and improve safety.

While errors often involve one or more persons making mistakes, many errors result from systems that fail to detect and prevent mistakes before they can harm patients. For example, poor patient tracking systems can result in patients being misidentified and receiving inappropriate care. Poor upkeep and maintenance practices in hospitals can lead to equipment failures. System problems that result from facility design (such as poor ventilation systems or lack of adequate handwashing stations in hospitals) can contribute to hospital-acquired

infections.³⁴ Failure to adopt and appropriately implement health information technology such as computer physician order entry into a health care setting can contribute to medication errors.³⁵

Since the IOM report, there have been some signs of progress.

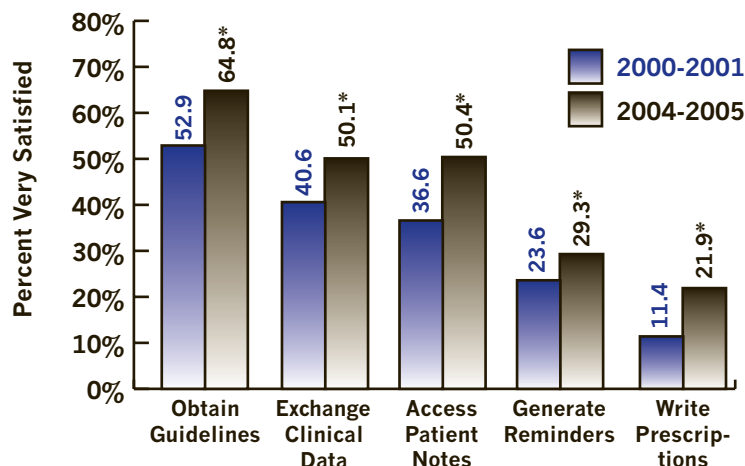
- The federal Agency for Healthcare Research and Quality (AHRQ) has created a Center for Quality Improvement and Patient Safety to conduct and fund research into patient safety and disseminate information on the best ways to prevent errors from happening.³⁶
- The Leapfrog Group, referred to earlier, was created to initiate breakthrough improvements in the safety, quality and affordability of health care. Leapfrog encourages the adoption of practices such as computer physician order entry (CPOE), evidence-based hospital referrals, intensive care unit physician staffing and adoption of a group of 30 safe practices.³⁷
- The Institute for Healthcare Improvement (IHI) launched the "100,000 Lives Campaign," an ini-

Senate Finance Committee – introduced the "Medicare Value Based Purchasing Act of 2005" (S. 1356), which would provide rewards to providers who reach or exceed a performance threshold established by the Secretary of Health and Human Services.

In the House of Representatives, Rep. Nancy Johnson (R-Conn.) introduced the "Medicare Value-Based Purchasing for Physicians' Services Act of 2005" (H.R. 3617), which would create a P4P program for Medicare physicians.

In August 2006, President Bush signed an executive order with the goal of promoting the quality and efficiency of healthcare. Among other things, the executive order requires federal agencies that provide health services to beneficiaries to implement quality measurement systems for health services and to develop "approaches," such as pay for performance systems, to encourage the provision of high quality care.³²

PERCENT OF PHYSICIANS IN PRACTICES WITH IT FOR SPECIFIC CLINICAL ACTIVITIES IN 2000-01 AND 2004-05



* Change from 2000-2001 is statistically significant at $p < .0001$

Source: Community Tracking Study Physician Survey, cited by Marie Reed and Joy Grossman, Data Bulletin No. 31, Center for Studying Health System Change, June 2006. (www.hschange.com/CONTENT/848)

tiative to engage U.S. hospitals in a commitment to implement changes in care proven to improve patient care and prevent avoidable deaths.³⁸

- The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has instituted a number of patient safety efforts including one to identify “sentinel events”— events such as an injury or a death that signal the need for an immediate investigation and response — and take action to prevent their recurrence. JCAHO has also implemented a set of 11 requirements for improving the safety of patient care in health care organizations.³⁹

In 2005, Congress enacted the Patient Safety and Quality Improvement Act. This law enables providers to contract voluntarily with Patient Safety Organizations (PSOs) to identify and analyze threats to patient safety and to make changes necessary to improve outcomes. Importantly, providers can report problems without fear that data will be disclosed or used in legal or administrative proceedings against them.⁴⁰ PSOs will work with hospitals and medical practices to collect information about patient safety incidents, including “near misses”— errors that do not ultimately harm the patient — to help determine the root cause of the problem and identify ways to change systems to avoid such errors in the future.

Prior to the legislation only a handful of such organizations existed. With the new legal authority and protection that number is expected to grow.

IS IT THE ANSWER?

Health information technology (IT) uses computers, software programs, electronic devices and the Internet to store, retrieve, update, and transmit information about patients’ health. If used correctly, health IT can give patients and their doctors, nurses, and other health professionals access to the information they need when they need it, so patients get the right care at the right time.

Health IT is used in a number of ways, including:

- Computerized ordering of medications, treatments, and tests;
- “Telemedicine” care to people far from doctors’ offices and hospitals;
- Sharing information among different hospitals and doctors caring for the same patient;
- Providing patients with access to their own health information; and
- Creating electronic health records to combine all of the information about a patient into one digital file.

According to the eHealth Initiative, the adoption of health IT reduces errors and improves the quality of care delivered.⁴¹ For example, research has shown that CPOE systems can reduce preventable medication errors by as much as 55 percent because they ensure, at a minimum, that orders are complete, standardized and legible.⁴² (See chart, “Percent of Physicians in Practices with IT for Specific Clinical Activities in 2000-01 and 2004-05.”)

But our nation’s health care system is still overwhelmingly paper-based. According to the Healthcare Information and Management Systems Society, only 24 percent of hospitals have electronic health record systems in place. And research by the U.S. Centers for Disease Control and Prevention shows that in 2001-2003:

- 31 percent of hospital emergency departments had access to electronic health records; and
- 40 percent of hospital emergency departments used computer-based prescribing systems.⁴³

Cost is often cited as the biggest barrier to health IT adoption, especially in rural areas and among the estimated 75,000 small physician practices in the U.S. In fact, for many there is a negative incentive to investing (in part due to concern that systems purchased may soon become obsolete) and a high failure rate among those who have tried to adopt electronic health records.

Providers aren't the only ones resisting greater use of health IT. Consumers are concerned that greater use of electronic information will threaten their privacy. For example, a 2005 Harris Interactive poll found:

- 70 percent of respondents were concerned that sensitive personal medical-record information might be leaked because of weak data security.
- 69 percent expressed concern that there could be sharing of medical information without the patient's knowledge.⁴⁴

According to a poll conducted in 2005 on behalf of California HealthCare Foundation:

- 72 percent of adults believe that shifting to computer-based medical record systems will increase the occurrence of unauthorized break-ins to computer systems/payment systems.
- Only 58 percent of respondents feel that their medical records are secure when stored in electronic format. In contrast, 66 percent feel that their medical records are secure when stored in paper format.⁴⁵

Recent high profile cases of identity theft validate consumer fears. In April 2005, the medical records of 185,000 patients were compromised when two computers were stolen from a California medical group's facilities.⁴⁶ Eight months later, medical records of more than 360,000 patients were stolen from the care of employees of Providence Health System in Washington State.⁴⁷ The Government Accountability Office has found that information systems at CMS and its parent Department of Health and Human Services are vulnerable to security breaches.⁴⁸

The Health Insurance Portability and Affordability Act (HIPAA) establishes basic protections for privacy of health information but efforts are being made to strengthen those protections. (For details on HIPAA protections, see the HHS website "Medical Privacy – National Standards to Protect the Privacy of Personal Health Information" at www.hhs.gov/ocr/hipaa.)

Numerous efforts are being made to increase the use of health IT. In 2004, President Bush created the Office of the National Coordinator for Health Information Technology to provide leadership for the development and implementation of a health information technology system that can communicate across the country or even around the world. Later that year, the president set a goal of every American having an electronic health record by 2014. In Congress, legislators have proposed a wide range of health IT bills but none had been enacted as of October 2006. An August 2006 executive order requires all Federal agencies that provide health services to beneficiaries use, when available, health information systems that meet certain standards for making data easy to exchange.⁴⁹

CHALLENGES AHEAD

There is still much work needed to improve the quality and safety of health care in the U.S.

Areas requiring additional effort, analysts suggest, include:

- Continued development and implementation of evidence based-guidelines to support clinical practice.^{50,51}
- Improving accountability of hospitals, providers and health plans for making quality improvements that integrate best practices with delivery of care.⁵²
- Better tools, including report cards, to help payers and consumers choose care providers based on quality.⁵³
- Provider payments structured to reward improvements in quality of care.⁵⁴
- Broader use of health information technology to reduce errors and improve safety.⁵⁵

The challenge underlying each of these issues is how to get key stakeholders to embrace a host of changes. Providers are being asked to alter the way they

deliver care and receive payment. Practice guidelines may intrude on a physician's clinical judgment and have been derided as "cookbook medicine" in some quarters.⁵⁶ Many providers need convincing that a quality measure will lead to improved quality before agreeing to conform to it.⁵⁷

Similarly, many doctors have resisted taking up health care IT, citing a range of reasons, including (1) perceived (and sometimes warranted⁵⁸) problems with the technology, (2) expense and (3) resistance to modifying the way they conduct their work.⁵⁹ Payment incentives will have to be adjusted in both the public and private sectors to induce each stakeholder to make necessary changes to improve patient safety.

Another challenge: Who should pay for IT? Providers are expected to bear most of the health IT system costs, while most of the benefits of such systems accrue to others – insurers, patients and governments.

Fortunately, the movement toward quality measurement and reporting appears to be gaining ground. Faced with high costs and mixed results, public and private purchasers of health care are demanding more information about the quality and efficiency of the U.S. health care system.

STORY IDEAS

- Do any hospitals in your area participate in the Premier Quality Demonstration? If so, how are those hospitals performing?
- How much care do people in your region receive compared to other areas and why? Are there legitimate health differences that account for any variation in services provided? If so, are there health concerns in your area that warrant greater public awareness? And if not, are there other reasons—such as excess hospital beds, or gluts or shortages of specialty providers—that account for differences in amount of services used. The Dartmouth Atlas project, which studies variations in the use of health care services across health care markets, is a great resource for stories on variation and can be found at www.dartmouthatlas.org.

- When does less care mean better care? Overuse of care can be as large a problem as underuse and unnecessarily burdens the health care system. For example, a recent report by the Agency for Healthcare Research and Quality found that medication is just as effective as surgery for the treatment of the condition that causes heartburn—a great example of a less intensive medical intervention being as effective as the more invasive and costly procedure.
- How can you help consumers choose health plans or hospitals? Many states issue report cards on the health plans and hospitals in the state. Medicare publishes national report cards. But most consumers don't know how to use them or what they mean. Try translating a report card into basic English for your audience.
- Do employers in your area use health plans that report HEDIS information and/or demand NCQA accreditation?

EXPERTS AND WEBSITES

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Websites

AARP
www.aarp.org

Academy Health
www.academyhealth.com

Agency for Healthcare Research and Quality
www.ahrq.gov/research/mentalix.htm

AHA Quality Center
www.ahaqualitycenter.org

Alliance for Community Health Plans www.achp.org	Healthcare Leadership Council www.hlc.org
Alliance for Health Reform www.allhealth.org	Institute for Health Policy Solutions www.ihps.org
Amer. Academy of Family Physicians Center for Health Information Technology www.centerforhit.org	Institute for Healthcare Improvement www.ihl.org/ihl
American Academy of Nurses www.aaanet.org	Joint Commission for the Accreditation of Healthcare Organizations www.jcaho.org
American Hospital Association www.aha.org	Kaiser Family Foundation www.kff.org
American Medical Informatics Association www.amia.org	Markle Foundation www.markle.org
American Nurses Association www.nursingworld.org	Medicare Payment Advisory Commission www.medpac.gov
Bridges to Excellence www.bridgestoexcellence.org	Medstat www.medstat.com
California HealthCare Foundation www.chcf.org	National Alliance for the Health Information Technology www.nahit.org
Cap Med www.capmed.com	National Committee for Quality Assurance www.ncqa.org
CareGroup Health System www.caregroup.org	National Committee for Quality Health Care www.ncqhc.org
Center for Health Transformation www.healthtransformation.net	National Patient Safety Foundation www.npsf.org
Center for Medical Consumers www.medicalconsumers.org	National Quality Forum www.qualityforum.org
Center for Studying Health System Change www.hschange.org	Office of the National Coordinator for Health Information Technology (ONC) www.hhs.gov/healthit/
Centers for Medicare and Medicaid Services www.cms.hhs.gov	Partners Healthcare www.partners.org
Council for Affordable Health Insurance www.cahi.org	Patient Safety Institute www.ptsafety.org
eHealth Initiative and Foundation www.ehealthinitiative.org	Premier www.premierinc.com
Federation of American Hospitals www.fah.org	RAND Health www.rand.org/research_areas/health/
Georgetown University Medical Center www.georgetownuniversityhospital.org	Robert Wood Johnson Foundation www.rwjf.org
Group Health Cooperative www.ghc.org	The Commonwealth Fund www.cmwf.org
Health Tech Strategies, LLC www.hlthtech.com	

The LeapFrog Group
www.leapfroggroup.org

UND Center for Rural Health
www.med.und.nodak.edu/depts/rural/index.html

University of Pennsylvania School of Nursing
www.nursing.upenn.edu

Urban Institute
www.urban.org

Vanderbilt Center for Better Health
www.mc.vanderbilt.edu/vcbh/

Veterans Health Administration
www.va.gov

ENDNOTES

- a Asch, Steven M.; Kerr, Eve; Keesey, Joan; Adams, John L.; Setodji, Claude M.; Malik, Shaista; and. McGlynn, Elizabeth A. (2006). "Who Is at Greatest Risk for Receiving Poor-Quality Health Care?" *New England Journal of Medicine*. March 16, 354(11):1147-56. (www.nejm.org)
- b Premier is an alliance of not-for-profit hospitals and health care systems that helps health care organizations achieve high levels of clinical quality and financial performance. More information is available on the Premier Web site, <http://www.premierinc.com>.
- c CMS Fact Sheet, Jan. 2006. <http://www.cms.hhs.gov/HospitalQualityInits/downloads/HospitalPremierFS200602.pdf>
- d Harris Interactive (2005). "Many Nationwide Believe in the Potential Benefits of Electronic Medical Records and are Interested in Online Communication with Physicians." News release. March 2.(www.harrisinteractive.com/news)
- 1 Institute of Medicine (2001). "Crossing the Quality Chasm: A New Health System for the 21st Century." p. 3. (<http://darwin.nap.edu/books/0309072808/html>)
- 2 Institute of Medicine (2001). "Crossing the Quality Chasm: A New Health System for the 21st Century." p. 226-227. (<http://darwin.nap.edu/books/0309072808/html>)
- 3 The National Academies, "Medication Errors Injure 1.5 Million People and Cost Billions of Dollars Annually," Press Release, July 20, 2006
- 4 McGlynn, E. A. ; Asch, S. M.; Adams, J.; et al. (2003). "The Quality of Health Care Delivered to Adults in the United States," *New England Journal of Medicine*, June 26, 348(26):2635-45.
- 5 Asch, Steven M.; Kerr, Eve; Keesey, Joan; Adams, John L.; Setodji, Claude M.; Malik, Shaista; and. McGlynn, Elizabeth A. (2006). "Who Is at Greatest Risk for Receiving Poor-Quality Health Care?" *New England Journal of Medicine*. March 16, 354(11):1147-56. (www.nejm.org)
- 6 National Committee for Quality Assurance (2004). "State of Health Care Quality 2004." Executive Summary, p. 10. (<http://www.ncqa.org/communications/SOMC/SOHC2004.pdf>)
- 7 Agency for Healthcare Research and Quality (2004). "National Health Care Quality Report, 2004" Key Themes and Highlights, p. 10. (<http://www.qualitytools.ahrq.gov/qualityreport/2004/documents/nhqr2004.pdf>)
- 8 Wennberg, John E.; Fisher, Elliott S.; Baker, Laurence; Sharp, Sandra M.; and Bronner, Kristen K. (2005). "Evaluating The Efficiency Of California Providers In Caring For Patients With Chronic Illnesses." *Health Affairs*, Web Exclusive Nov. 16, 2005. (<http://content.healthaffairs.org/cgi/reprint/hlthaff.w5.526v1>)
- 9 URAC, Health Utilization Standards Management Standards Version 5.0 , 2006 pg. 24.
- 10 Antman et al., (2004). "ACC/AHA Guidelines for the Management of Patients with ST-Elevation Myocardial Infarction." *American College of Cardiology and The American Heart Association*, p. e37. <http://www.acc.org/clinical/guidelines/stemi/Guideline1/index.pdf>
- 11 Agency for Healthcare Research and Quality (2004). "Despite overall national improvement in beta-blocker use after heart attack, the rate of improvement varies across hospitals." September. (<http://www.ahrq.gov/research/sep04/0904RA17.htm>)
- 12 Alliance of Community Health Plans. "Health Care/Health Plan Quality Measurement" (http://www.achp.org/page.asp?page_id=775) Accessed on June 19, 2006.; Berman, Henry, (1999). "Performance Measures: The Destination or Journey?" *Effective Clinical Practice*, November/December. (<http://www.acponline.org/journals/ecp/novdec99/berman.pdf>)
- 13 Alliance of Community Health Plans. "Health Care/Health Plan Quality Measurement" (http://www.achp.org/page.asp?page_id=775) Accessed on June 19, 2006.; Berman, Henry, (1999). "Performance Measures: The Destination or Journey?" *Effective Clinical Practice*, November/December. (<http://www.acponline.org/journals/ecp/novdec99/berman.pdf>)

- 14 National Committee for Quality Assurance (2004). "NCQA Releases HEDIS 2005; Focus is on Health Issues Familiar to Seniors, Working Americans." Press Release, July 8. (www.ncqa.org/communications/news/hedis2005.htm) Accessed June 23, 2006.
- 15 National Quality Forum. "National Quality Forum Mission" (www.qualityforum.org/mission/default.htm) Accessed June 27, 2006.
- 16 Maxwell, James et al., (2004). "Private Health Purchasing Practices in the Public Sector: A Comparison of State Employers and the Fortune 500." *Health Affairs*; March/April, p.182-190. (<http://content.healthaffairs.org/cgi/reprint/23/2/182>)
- 17 National Committee for Quality Assurance (2004). "State of Health Care Quality 2004." (Executive Summary, p. 13. (<http://www.ncqa.org/communications/SOMC/SOHC2004.pdf>)
- 18 Shortell, S.M.; Schmittiel, J.; Wang, M.C. et al. (2005). "An Empirical Assessment of High-Performing Medical Groups: Results from a National Study." *Medical Care Research and Review*, August 2005, 62(4):407-34.
- 19 Bridges to Excellence. "Bridges to Excellence Overview." (http://www.bridgestoexcellence.org/about_us/home.htm) Accessed June 27, 2006.
- 20 Bridges to Excellence. "Bridges to Excellence Overview." (http://www.bridgestoexcellence.org/about_us/home.htm) Accessed June 27, 2006.
- 21 Integrated Healthcare Association. "Pay For Performance Overview." (<http://www.iha.org/P4POVIEW.htm>) Accessed June 27, 2006.
- 22 Alliance for Health Reform (2006). "Pay-for-Performance: A Promising Start" Issue Brief, February, p. 2. (http://www.allhealth.org/issue_briefs_pay-for-performance.asp)
- 23 Telephone conversation with Dr. Ron Bangasser, IHA, Feb. 6, 2006.
- 24 The Leapfrog Group (2005). "About Us - Leapfrog Hospital Rewards Program." (http://www.leapfroggroup.org/about_us/other_initiatives/incentives_and_rewards/rewards_program) Accessed June 27, 2006.
- 25 The Leapfrog Group (2006). "Leapfrog Hospital Rewards Program." (<http://leapfrog.medstat.com/hrp/index.asp>) Accessed June 27, 2006.
- 26 Centers for Medicare and Medicaid Services (2006). "Reporting Hospital Quality Data for Annual Payment Update (RHQDAPU)." January. (www.cms.hhs.gov/HospitalQualityInits/downloads/HospitalRHQDAPU200602.pdf) (); The Medicare Modernization Act of 2003 allowed hospitals that voluntarily reported 10 quality measures to receive the full annual payment update. Those that did not do so were penalized 0.4 percent. See also Centers for Medicare and Medicaid Services, "Hospital Quality Initiative Overview," December 2005. (www.cms.hhs.gov/HospitalQualityInits/downloads/HospitalOverview200512.pdf)
- 27 Premier is an alliance of not-for-profit hospitals and health care systems that helps health care organizations achieve high levels of clinical quality and financial performance. More information is available on the Premier Web site, <http://www.premierinc.com>.
- 28 Centers for Medicare and Medicaid Services (2006). "Rewarding Superior Quality Care: The Premier Hospital Quality Incentive Demonstration." Fact Sheet, January 2006. (<http://www.cms.hhs.gov/HospitalQualityInits/downloads/HospitalPremierFS200602.pdf>)
- 29 Centers for Medicare and Medicaid Services (2006). "Rewarding Superior Quality Care: The Premier Hospital Quality Incentive Demonstration." Fact Sheet, January 2006. (<http://www.cms.hhs.gov/HospitalQualityInits/downloads/HospitalPremierFS200602.pdf>)
- 30 Centers for Medicare and Medicaid Services (2004). "CMS Doctor's Office Quality Project Overview." July 15, 2004. (www.cms.hhs.gov/PhysicianFocusedQualInits/downloads/PFQIdoqOverview.pdf).
- 31 Centers for Medicare and Medicaid Services (2006). "Physician Focused Quality Initiative." Last modified April 12, 2006. (www.cms.hhs.gov/PhysicianFocusedQualInits/01_Overview.asp) Retrieved June 30, 2006.
- 32 White House Office of the Press Secretary, "Executive Order: Promoting Quality and Efficient Health Care in Federal Government Administered or Sponsored Health Care Programs," August 22, 2006.
- 33 Institute of Medicine (2001). "To Err is Human." National Academy Press, p. 1. (<http://www.nap.edu/books/0309068371/html>)
- 34 Gary A. Noskin and Lance R. Peterson, Engineering Infection Control through Facility Design, Retrieved Aug, 31, 2006 at <http://www.cdc.gov/ncidod/eid/vol7no2/noskin.htm>
- 35 D.W. Bates et al., (1998). "Effect of Computerized Physician Order Entry and a Team Intervention on Prevention of Serious Medication Errors." *Journal of the American Medical Association*: October 21, Volume 280(15): 1311-1316.

- ³⁶ Center for Quality Improvement and Patient Safety (2004). “Mission Statement: Center for Quality Improvement and Patient Safety.” February 2004. (<http://ahrq.gov/about/cquips/cquipsmiss.htm>)
- ³⁷ The Leapfrog Group (2005). “The Leapfrog Group Fact Sheet” (http://www.leapfroggroup.org/about_us/leapfrog-factsheet)
- ³⁸ Institute for Healthcare Improvement. “100,000 Lives Campaign - Overview.” (<http://www.ihl.org/IHI/Programs/Campaign/Campaign.htm?TabId=1>)
- ³⁹ Joint Commission on Accreditation of Healthcare Organizations (2006). “Facts About Patient Safety.” Updated May 2006. (http://www.jointcommission.org/PatientSafety/facts_patient_safety.htm)
- ⁴⁰ Agency for Healthcare Research and Quality (2006). “The Patient Safety and Quality Improvement Act of 2005.” Overview, June 2006. (<http://ahrq.gov/qual/psoact.htm>)
- ⁴¹ eHealth Initiative (2006). “About: Why eHI Was Created.” (<http://www.ehealthinitiative.org/about/why.msp>) Accessed June 28, 2006.
- ⁴² D.W. Bates et al., (1998). “Effect of Computerized Physician Order Entry and a Team Intervention on Prevention of Serious Medication Errors.” *Journal of the American Medical Association*: October 21, Volume 280(15): 1311-1316.
- ⁴³ Burt, Catharine W. and Hing, Esther (2005). “Use of Computerized Clinical Support systems in Medical Settings: United States, 2001-03.” Centers for Disease and Control and Prevention, National Center for Health Statistics. *Advance Data from Vital and Health Statistics*, No. 353, March 15, 2005.
- ⁴⁴ Harris Interactive for the Program on Information Technology, Health Records and Privacy (2005). “How the Public Sees Health Records and An EMR Program.” February 2005. (<http://www.pandab.org/Healthtopline.pdf>)
- ⁴⁵ California HealthCare Foundation (2005). “National Consumer Health Privacy Survey 2005.” Slide Presentation, November 9. p. 26-27. (<http://www.chcf.org/documents/ihealth/ConsumerPrivacy2005Slides.pdf>)
- ⁴⁶ Kawamoto, Dawn (2005). “Medical group: Data on 185,000 Stolen.” *News.com*, April 8, 2005 (http://news.com.com/2100-7349_3-5660514.html)
- ⁴⁷ Komo News Services (2006). “Thousands of Washington Patient Records Stolen.” January 25, 2006. (<http://www.komoradio.com/news/story.asp?ID=41511>)
- ⁴⁸ Government Accountability Office (2006). “Information Security: Department of Health and Human Services Needs to Fully Implement its Program.” *Highlights*, February 2006. (<http://www.gao.gov/new.items/d06267.pdf>)
- ⁴⁹ White House Office of the Press Secretary, “Executive Order: Promoting Quality and Efficient Health Care in Federal Government Administered or Sponsored Health Care Programs,” August 22, 2006.
- ⁵⁰ Timmerman, Stefan, Mauck, Aaron, *The Promises and Pitfalls of Evidence-based Medicine*, *Health Affairs*, Jan./Feb. 2004, p.g. 24.
- ⁵¹ Grol, Richard, *Successes and Failures in Implementation of Evidence-based Guidelines for Clinical Practice*, *Medical Care* Vol. 39, No. 8., p. II-46.
- ⁵² National Committee for Quality Assurance (2004). “State of Health Care Quality 2004.” (Executive Summary, p. 13-14 (<http://www.ncqa.org/communications/SOMC/SOHC2004.pdf>))
- ⁵³ National Committee for Quality Assurance (2004). “State of Health Care Quality 2004.” (Executive Summary, p. 13-14 (<http://www.ncqa.org/communications/SOMC/SOHC2004.pdf>))
- ⁵⁴ NCQA, *State of Health Care Quality*, 2004 p.g. 15.
- ⁵⁵ Clancy, Carolyn, *Evidence-Based Decision Making: Global Evidence, Local Decisions*, *Health Affairs*, Vol. 24, No. 1, p 158.
- ⁵⁶ Timmerman, Stefan, Mauck, Aaron, *The Promises and Pitfalls of Evidence-based Medicine*, *Health Affairs*, Jan./Feb. 2005, p.g. 21
- ⁵⁷ Ron Bangasser, *Pay-for-performance: Taking Healthcare Quality Improvement to the Next Level*, 7/15/06. Transcript, p. 34.
- ⁵⁸ Koppel R, Metlay J, Cohen A, Abaluck B, Localio AR, Kimmel SE, et al. (2005). “Role of Computerized Physician Order Entry Systems in Facilitating Medication Errors.” *Journal of the American Medical Association*: 293(10):1197–203.
- ⁵⁹ Medicare Payment Advisory Commission (2004). “Report to Congress: New Approaches in Medicare.” Chapter 7, *Information Technology in Healthcare*. June 2004; pp. 167-171. (http://www.medpac.gov/publications/congressional_reports/June04_ch7.pdf)