



The Measurement of Health Care Performance Primer

3rd Edition

Introduction to Third Edition

It is now well-accepted that two seminal reports of the Institute of Medicine (IOM) have become integrated into the culture of medicine in the past decade and a half: *To Err is Human: Building a Safer Health System* (1999), and *Crossing the Quality Chasm: A New Health System for the Twenty-first Century* (2001). These two reports catalyzed the evolution of patient safety and quality improvement in healthcare in the 21st century.

For fifty-plus years, physicians had counted Continuing Medical Education (CME) credits and reported them primarily to state medical boards (SMBs). CME credits served to communicate a message to the public that physicians were keeping up with advances in medical practice. With the introduction in 2005 of Performance-Improvement CME (PI-CME) by a national task force convened by the American Medical Association (AMA), CME began to integrate and award credit to formal quality improvement activities.

In 2002, the Accreditation Council for Graduate Medical Education (ACGME) introduced six competencies expected of graduates of training programs in all specialties, including patient care, medical knowledge, practice-based learning and improvement, professionalism, interpersonal skills and communication, and systems-based practice. The American Board of Medical Specialties (ABMS) adopted these competencies as expectations of physicians throughout their practice careers, as well.

Around the same time, ABMS introduced the new paradigm of Maintenance of Certification (MOC). MOC began to ask physicians to not only participate in CME, but to voluntarily self-assess their medical knowledge, and to participate in assessing and ultimately improving their performance in practice by benchmarking against nationally accepted performance measures for each specialty.

At the end of the first decade of the new century, the Federation of State Medical Boards of the United States (FSMB) adopted the concept of Maintenance of Licensure (MOL). MOL is designed to facilitate the evolution of SMBs from focusing on pursuing reports of potentially incompetent physicians to assuring the public of the on-going competence of all physicians practicing in their state.

In 2009, the Council of Medical Specialty Societies (CMSS), whose member organizations represent 750,000 physicians in the US, adopted strategic priorities emphasizing a culture of performance improvement in medical practice; and professionalism, to include altruism (putting the needs of patients first), self-regulation, and transparency (including disclosure to peers and reporting to patients and the public).

With the recent adoption of the National Quality Strategy (NQS), importantly by the Center for Medicare and Medicaid Services (CMS), the federal government is joining the profession in a national challenge to measure, report and ultimately improve performance in medical practice. This is all of our challenge.

Norman B. Kahn, Jr., MD
Executive Vice-President and CEO
Council of Medical Specialty Societies

“Without continual growth and progress, such words as improvement, achievement, and success have no meaning.”

Benjamin Franklin

Overview and Purpose of Primer

Providing the highest quality of care at the most reasonable cost to all individuals remains a primary tenet for physicians. Much of this focus is grounded in a dedication to professionalism. In 2002, the ABIM Foundation, the ACP-ASIM Foundation and the European Federation of Internal Medicine, in light of the growing demands on physicians, released a charter defining medical professionalism as:

“...the basis of medicine’s contract with society. It demands placing the interests of patients above those of the physician, setting and maintaining standards of competence and integrity, and providing expert advice to society on matters of health”.¹

This charter defined principles that apply to every physician and should serve as the foundation by which one provides care. There remains an inherent assumption by patients and their families that all physicians provide the highest quality of care at the most reasonable cost, resulting in the best possible outcome for patients and their families. In the last few decades, patients, families, employers, purchasers and others questioned whether this assumption is indeed true in the absence of supportive data while health care costs continue to rise – \$2.8 trillion in 2012.² These questions led to the development of focused initiatives around quality improvement, performance measurement and pay-for-performance in recent years.

In 2007, the Council of Medical Specialty Societies (CMSS) with support of the United Health Foundation (2007) developed a paper outlining the measurement of health care performance to serve as a quick reference guide to this multifaceted arena, and to support the ongoing work of medical specialty societies to advance quality and continuous professional development. UHF provided additional support to CMSS to update this “Primer” in 2014.

The purpose of this primer is to provide practicing physicians, leaders and staff of professional societies, national medical boards, and other organizations with:

- An overview of the quality improvement and performance measurement landscape;
- Basics on the key definitions and measurement concepts/methodologies in use today;
- Descriptions of the key players in quality improvement and performance measurement;
- An overview of current activities in this landscape;
- A brief analysis of the challenges of quality improvement and measure development; and
- The future of quality improvement and performance measurement.

This primer is intended to serve as background and a resource guide on quality improvement and performance measurement for those who are new to this area and also to those individuals who are interested in remaining current on new and emerging issues.

Background on Quality Improvement and Performance Measurement

Grounded in the principles of professionalism, ensuring that all patients receive the highest quality of care remains one of the underlying tenets of the medical profession. While physicians strive to achieve this goal every day, it was recognized that it requires continuous learning to remain up-to-date with the evidence, ongoing assessment of actual performance, and targeted efforts toward improvement.

1900

Dr. Codman published his “End Result Idea”

ACS creates the Minimum Standards for Hospitals in 1917

1925

Quality Gurus: Deming, Juran, and Crosby begin quality and efficiency work in manufacturing after World War II

1950

The Joint Commission accredits the first set of hospitals in 1953

Early Quality Efforts Leading to National Initiatives

Dr. Ernest Codman was one of the first physicians in the United States to recognize this need and in early 1900’s introduced the concept of the “End Result Idea”. He advocated that patients should be tracked by hospitals to determine whether the treatment was successful and if not, to investigate why not – preventing future failures. His system mirrored the Plan Do Study Act (PDSA) cycle used today and by measuring the end result a hospital could determine the competency of surgeons and standardize care. Dr. Codman even took this concept a step further and encouraged hospitals to document its findings, implement necessary changes within its policies and procedures, and publicly report the results. While he was unsuccessful in spreading this concept widely to other physicians and hospitals during his lifetime, his work is now recognized as invaluable to the medical profession and many of his beliefs that care should not include “useless” visits, unneeded lengthy hospitalizations and errors that are avoidable and costly can be seen in current initiatives.³

Following his work, many individuals continued to examine how to best improve the quality of services delivered. Three of whom are recognized as key contributors to the concepts and theories around quality – W. Edwards Deming, Joseph Juran and Philip Crosby. Their primary focus was in manufacturing but the principles and theories proved to be readily applicable to health care, including quality improvement, management’s role in ensuring quality, minimizing variation or “zero defect” as defined by Philip Crosby, and measuring the total cost of quality.⁴ Their work serves as the basis for Total Quality Management, Six Sigma and Lean processes, which are increasingly used in health care today.

The work of Dr. Codman served as the impetus for several initiatives beginning with the American College of Surgeons’ (ACS) Minimum Standards for Hospitals in 1917 to the creation

1975

Accreditation of health plans begins with creation of NCQA in 1990

Community efforts begin with creation of Regional Health Information Collaboratives

NY is the first state to publicly report hospital and physician performance

National studies by CMS and others identify gaps in care through use of performance measures in 1995

The Joint Commission incorporates performance measurement into accreditation in 1998

IOM publishes the first of a series of reports on quality, beginning with *To Err is Human* in 1998

of the Joint Commission on Accreditation of Hospitals (now The Joint Commission) by the American College of Physicians, ACS, American Hospital Association, the American Medical Association (AMA), and the Canadian Medical Association. Its first accreditation of hospitals occurred in 1953 with later expansion to other sectors such as long-term care and psychiatric facilities. In 1970, The Joint Commission's hospital accreditation program's standards no longer looked at the "minimum essential levels of quality" required but rather looked for "optimal achievable levels" and ORYX® was implemented in 1998 to include performance measures in accreditation followed by disease-specific certification programs.⁵

Since its inception in 1965, the Centers for Medicare & Medicaid Services (CMS) similarly focused on programs around quality assurance and utilization using the Peer Review Organizations (now the Quality Improvement Organizations [QIOs]). CMS directed the work of the QIOS by releasing periodic Scope of Work statements, which focused on completing case reviews and other quality monitoring activities.⁶

In the 1990's, initiatives around quality improvement and performance measurement at the national level began to accelerate. CMS transitioned to assessing the quality of care through performance measurement by examining results on acute myocardial infarction for patients with Medicare.⁷ This study retrospectively reviewed medical records, while others examined the performance of physicians based on review of administrative claims.⁸ All were finding gaps in care where patients were not receiving the minimum standard based on the current evidence.

As accreditation of hospitals and other inpatient services continued to evolve, accreditation and certification programs broadened to include health plans through the creation of the National Committee for Quality Assurance (NCQA) in 1990. NCQA released its first State of the Health Care Quality in 1997, reporting on the quality of health care services provided to individuals by commercial health plans using the Healthcare Effectiveness Data and Information Set (HEDIS®) measures. NCQA products now include disease-specific certification programs, measurement of physicians and other health care providers, accountable care organizations and others.⁹

Physician Quality-related Activities

Medical specialty societies have historically been a trustworthy resource for physician-led guideline development and the dissemination of best practices. Many view this work as an important step toward demonstrating self-regulation and

2000

AMA convenes the Physician Consortium for Performance Improvement in 2000 – the first physician-led, multi-specialty group of its kind

ABMS revises MOC in 2000 and FSMB for MOL in 2010 requiring quality improvement & performance measurement activities

ACA passes in 2010

Healthcare community adopts NQS in 2011

professionalism. A study in 2007 identified that 35% of specialty societies expanded their scope to include performance measure development, demonstrating further recognition of the role that physicians play in defining and improving performance and quality.¹⁰ In addition, the AMA first convened the Physician Consortium for Performance Improvement® (PCPI)– a group that developed more than [250 performance measures](#) in collaboration with multiple state and specialty societies, to address gaps in care.¹¹

In addition to developing guidelines and performance measures, many physician-led organizations use clinical data registries and foster quality improvement programs. Several of these initiatives are outlined later in this primer.

State licensure boards and medical specialty boards also recognized that licensure and board certification should promote ongoing assessment of currency with the evidence and demonstrated competency of physicians' skills. The American Board of Medical Specialties (ABMS) in 2000 and the Federation of State Medical Boards (FSMB) in 2004 incorporated components of quality improvement and performance measurement into certification and licensure requirements.^{12,13} Physicians use performance measures, PDSA cycles, and other quality improvement tools to meet these requirements.

Local, regional, and state initiatives

In addition to the national programs, providers and institutions implemented quality improvement activities at the local level, often completing PDSA cycles where they identified an area of concern or gap in care, planned and implemented what interventions should be undertaken, analyzed the results and

made modifications for continued improvement. Leaders also recognized that leveraging resources and knowledge across a region could enable health care providers and others to significantly impact health care delivery, information exchange and payment. As a result, groups such as the Regional Health Information Collaboratives formed, beginning in the early 1990's.¹⁴ Several states also identified the need to ensure that individuals received quality of care and costs were contained. New York State was the first state to publicly release hospital-specific performance results on cardiac procedures in 1990 and physician-specific results in 1992¹⁵ followed by Pennsylvania, the Northern New England Consortium and others.

Developing a Framework for Quality and Performance Measurement

In the 1990's and early 2000's, the Institute of Medicine (IOM) released a series of reports that were instrumental in framing quality in health care. First, quality of care was defined as:

“the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”¹⁶

IOM further classified quality problems as underuse, overuse and misuse in IOM’s *Statement on Quality of Care with To Err is Human* building on this concept.^{17,18} Several studies were released that identified that “at least 44,000 people, and perhaps as many as 98,000 people, die in hospitals each year as a result of medical errors that could have been prevented”.¹⁸ Most medical errors are unintentional and are often due to broken or missing processes. If these were addressed, harm would be eliminated or minimized and the report recommended the advancement of performance standards including those around licensure, certification and accreditation.

IOM Categories of Quality Problems¹⁷

Category	Example
“Underuse is the failure to provide a health care service when it would have produced a favorable outcome for a patient.”	Adults who had a myocardial infarction and were not discharged on beta-blocker therapy.
“Overuse occurs when a health care service is provided under circumstances in which its potential for harm exceeds the possible benefit.”	Overuse of imaging studies in patients with low back pain.
“Misuse occurs when an appropriate service has been selected but a preventable complication occurs and the patient does not receive the full potential benefit of the service.”	Prescribing inappropriate medications in the elderly.

Crossing the Quality Chasm put forward a framework for health care based on six improvement aims of safe, effective, patient-centered, timely, efficient, and equitable.¹⁹ Many groups focused on quality improvement and performance measurement used these aims as the underlying framework to guide development of these initiatives.

While these aims were instrumental in enabling health care providers and organizations develop a strategy, the Institute for Healthcare Improvement (IHI) led by Donald Berwick believed that a broader approach with aligned goals was needed around which the U.S. health care system could unite – the “Triple Aim”, “improving the individual experience of care; improving the health of populations; and reducing the per capita costs of care for populations”.²⁰

During this time, among the laws passed related to health care several were instrumental to the current quality and cost efforts, including the Medicare Modernization Act of 2003 (MMA), Medicare Improvements for Patients and Providers Act of 2008 (MIPPA), Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH) and the Patient Protection and Affordable Care Act of 2010 (ACA). Each furthered expectations of the roles of physicians, hospitals, and other providers in delivering high quality care at a reasonable cost and proposed new delivery models to demonstrate this efficiency through public reporting, pay-for-performance and other incentives.

Following the enactment of the ACA, the Triple Aim became the foundation for the National Quality Strategy (NQS) in 2011.²¹

NQS Strategy²¹ **NQS Aims**



Better Care: Improve the overall quality, by making health care more patient-centered, reliable, accessible, and safe.

Healthy People/Healthy Communities: Improve the health of the U.S. population by supporting proven interventions to address behavioral, social and, environmental determinants of health in addition to delivering higher-quality care.

Affordable Care: Reduce the cost of quality health care for individuals, families, employers, and government.

NQS Priorities



Making care safer by reducing harm caused in the delivery of care.



Ensuring that each person and family is engaged as partners in their care.



Promoting effective communication and coordination of care.



Promoting the most effective prevention and treatment practices for the leading causes of mortality, starting with cardiovascular disease.



Working with communities to promote wide use of best practices to enable healthy living.



Making quality care more affordable for individuals, families, employers, and governments by developing and spreading new health care delivery models.

The Agency for Healthcare Research and Quality (AHRQ) led the development and dissemination of the NQS for the U.S. Department of Health & Human Services (HHS). Because NQS is viewed as a collaboration of private and public health care organizations, many groups participate in its development and refinement and are encouraged to use this strategy to guide and frame their work. For example, all federal agencies release Agency-Specific Plans to track their progress toward achieving these aims and priorities and federal programs that use performance measures assess how adequately all of the priorities are addressed.

Key Definitions and Measurement Concepts/Methodologies

Within health care systems, performance measurement remains a primary tool by which internal quality improvement efforts are monitored and accountability programs (i.e., pay-for-performance) are assessed. Comparing performance against internal and external benchmarks allows individuals and organizations to continually monitor and learn from

their efforts. To accomplish this, The Joint Commission, NCQA, the AMA-convened PCPI, medical specialty societies and others develop performance measures around quality, with most beginning by examining processes of patient care followed by outcomes, and more recently cost of care. Understanding how these measures are developed, defined and used is essential to enabling physicians and others to anticipate and adequately address the requirements now expected by private and public payers, purchasers, patients and others.

Development of performance measures involves multiple steps, including determining the topic of interest, convening a group of experts, defining and specifying the measure to testing and actual use.

Defining the Measure Intent and Focus

The focus and intent of a performance measure must first be determined in order to ensure that the data and analyses accurately capture the desired information. The focus of the measure could be to define the quality (i.e., underuse, appropriate use) or the cost associated with the care provided for a given disease or condition. Measures can also look at the patient's experience of care or access to care. All measures should ideally meet one or more of the NQS' priority areas and fit within one or more of the IOM domains.

How quality of care is measured typically follows the framework developed by Avedis Donabedian.²²

- **Structure** measures are “the relatively stable characteristics of the providers of care, of the tools and resources they have at their disposal, and of the physical and organizational setting in which they work.”²²

These measures examine whether the necessary infrastructures are in place such as participation in a registry or training or certification for a specialty or specific procedure and should demonstrate a link to improved patient outcomes.

- **Process** measures look at “a set of activities that go on within and between practitioners and patients.”²²

These measures examine whether a given medication or procedure is provided to a specified set of patients such as aspirin at arrival to a hospital when suffering from a heart attack. Process measures should assess those aspects of care that are as proximal to the intended patient outcome as possible.

- **Outcome** measures assess “changes in a patient's current and future health status that can be attributed to antecedent health care.”²²

Mortality is a classic example of an outcome measure while intermediate outcome measures look at markers of health status such as HbA1c or LDL levels. These measures may be risk adjusted or stratified according to specific patient characteristics to control for the influence of other factors on the data of interest.²³

For use in its quality measurement programs, CMS defines an outcome measure more broadly, that is one that “assesses the results of health care that are

experienced by patients—patients’ clinical events, patients’ recovery and health status, patients’ experiences in the health system, and efficiency/cost.”²⁴

Measures that look at outcomes from the viewpoint of the patient are of increasing interest. These **patient-reported performance measures** are measures that look at a given provider’s performance (i.e., physician, hospital) based on the “report of the status of a patient’s health condition that comes directly from the patient, without interpretation of the patient’s response by a clinician or anyone else”.²⁵

Other measures look at the costs and/or resources used to deliver care. Measures that look at the **cost of care** are specific to “the amount, usually specified in dollars, related to receiving, providing, or paying for medical care”.²⁶ Other measures look at **resource use** – “the goods or services that are combined to produce medical care”.²⁶ In order to define these types of measures, many payers developed **episode groupers** - “the software and logic that assigns patient utilization to clinically relevant episodes of care”.²⁷ These **episodes of care** must be defined to determine which costs or resources, what timeframes, providers, settings and other aspects unique to that diagnosis or patient selection should be included.

Developers also typically identify the level of reporting or unit of measurement (e.g., to whom the measure should be attributed) at this time. For example, measures can be reported at the individual physician or hospital level. There is a growing recognition that care is not provided by one individual but rather by a team or group of individuals or entities across settings of care and measures that look across settings and providers are increasingly common. For example, a patient-reported outcome measure that assesses a patient’s report of functional status after total knee replacement could involve evaluating the surgeon, hospital and rehabilitation facility.

Defining the Measure Components

Once the intent and focus of the measure is decided, the underlying evidence must be evaluated, as it serves as a guide to the various components used to collect and calculate the measure. Evidence can be derived from clinical guidelines and studies and the quantity, quality and consistency of the evidence should be assessed.²⁸ Ideally, measures are based on evidence where there is the highest quality with sufficient numbers of studies to support the focus and little to no disagreement. The desire for sufficient strength of the evidence grows as the intended use of the measure is linked to some type of accountability.

Measures are comprised of several components with definitions and examples below.

Component	Heart Failure: ACE Inhibitor or ARB Therapy for LVSD ²⁹	Diabetes Foot Exam ³⁰
Description – statement describing the patient population and the aspect of care to be measured in a given timeframe	Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge	The percentage of patients 18-75 years of age with diabetes (type 1 and type 2) who received a foot exam (visual inspection with either a sensory exam or a pulse exam) during the measurement year

Component	Heart Failure: ACE Inhibitor or ARB Therapy for LVSD ²⁹	Diabetes Foot Exam ³⁰
Denominator - the population of interest supported by the evidence during a specified time period	All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction	Patients 18-75 years of age by the end of the measurement year who had a diagnosis of diabetes (type 1 or type 2) during the measurement year or the year prior to the measurement year
Numerator - the aspect of care – structure, process, or outcome – being measured and its frequency	Patients who were prescribed* ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge *Prescribed may include: Outpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list Inpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list	Patients who received a foot exam (visual inspection with either a sensory exam or a pulse exam) during the measurement year
Exclusions/Exceptions - those patients for whom the aspect of care may not apply. Exclusions are considered absolutes where the aspect of care is consistently not appropriate for a set of patients. Exceptions are not absolute and intended to be used at the provider's discretion based on patient characteristics or choice.	Denominator Exceptions: Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (e.g., hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia) Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy	Denominator Exclusions: Exclude patients with a diagnosis of polycystic ovaries who did not have a face-to-face encounter, in any setting, with a diagnosis of diabetes during the measurement year or the year prior to the measurement year. Diagnosis may occur at any time in the patient's history, but must have occurred by the end of the measurement year. Exclude patients with gestational or steroid-induced diabetes who did not have a face-to-face encounter, in any setting, with a diagnosis of diabetes during the measurement year or the

Component	Heart Failure: ACE Inhibitor or ARB Therapy for LVSD ²⁹	Diabetes Foot Exam ³⁰
		year prior to the measurement year. Diagnosis may occur during the measurement year or the year prior to the measurement year, but must have occurred by the end of the measurement year.

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Measure performance is typically calculated as follows:

$$\frac{\text{Numerator}}{\text{Denominator} - \text{Exclusions} + \text{Exceptions}}$$

In addition to providing the overall rate of performance, exception rates should be reported separately (i.e., medical, patient and system) for each measure. This reporting allows users to better understand the number and type of exceptions a provider may encounter within a patient population or his/her practice and is useful for quality improvement activities. For example, review of the specific reasons for a medical exception may identify an opportunity for education when a provider is not prescribing a medication for a reason that is not evidence-based and identification of a patient reason based on cost may allow the provider to identify additional financial assistance if available.

Determining the Appropriate Data Source: Measure Specifications

There are many potential sources for the data required to calculate performance measures, including but not limited to, administrative data (e.g., claims) electronic clinical data (e.g., electronic health record, laboratory, pharmacy), paper medical records, and surveys. Two critical elements are necessary to ensure that measures are **feasible** to collect and produce **reliable** and **valid** results:

- Precise specifications that outline the data elements and associated coding and
- Careful selection of the data source and testing of the data.

Clinical registries and electronic health record systems (EHRs) are increasingly used as the basis for measures as each may require less effort over time to collect the data than the traditional manual medical record abstraction. Much work still remains for the many vendors, products and platforms to ensure valid calculation and reporting of the data and provide meaningful and actionable feedback for providers.

Ideally, one measure is able to assess the quality or cost across multiple provider types (e.g., physicians, hospitals) and settings (e.g., ambulatory, nursing homes). In some cases multiple measures may be needed, often due to availability of data sources.

Developing Complex Measures

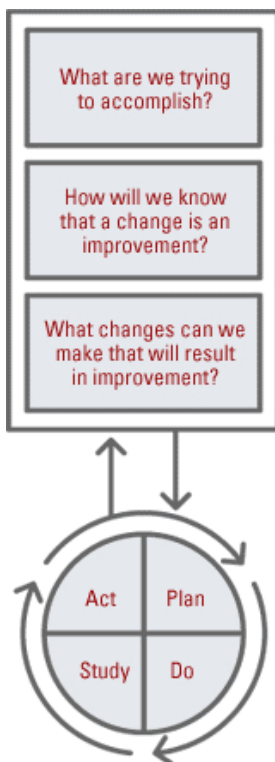
As measure development continues to evolve, so does the generation of more sophisticated

types of measurement to capture new and more complex representations of health care delivery. Traditionally, performance measures looked at one aspect of care. Recognizing that those single measures do not reflect how care is provided to patients, **bundled or paired** measures (e.g., two or more separate measures that are intended to be implemented and reported together) and **composite** measures (e.g., two or more measures aggregated into one score) are emerging. Composites are particularly viewed as measures that can provide a comprehensive picture of patient care as they often represent to what degree multiple outcomes or processes for a patient population or episode of care are achieved. These measure types may be calculated differently than described above with rates either reported separately or aggregated into one score.

Another emerging area is around assessing efficiency or value. An **efficiency of care** measure evaluates “the relationship between a specific level of quality of health care provided and the resources used to provide that care,”²³ while a **value** measure assesses the patients outcomes and experience of care and quality of life against the costs required to achieve those results^{26,31}

Use for Quality Improvement and/or Accountability

Measures can be used for quality improvement activities within a practice, hospital or other health care entity or for accountability purposes such as by employers, health plans, government entities and others. In either case, measure specifications and results of testing should support the intended use.



IHI Model for Improvement & PDSA Cycle³²

When a group intends to use a measure for quality improvement purposes, the rigor of the measure specifications and data collection may not be expected to produce results with the same level of reliability and validity than if it were intended to be used for accountability purposes. Many groups use these types of measures as a part of a PDSA cycle where the measure(s) allow identification of where best practices may not be followed or people deviate from processes.

Once these areas of discrepancy are identified, a root cause analysis (RCA) can be conducted to pinpoint variation in standard practice. For example, a higher incidence of patient falls in a specific area of the hospital may indicate a problem with flooring or a need for one-on-one education of certain staff. Many tools are available to assist with an RCA but in general a predetermined protocol is used that collects data and recreates the event. This information is then analyzed to determine how and why there was an error or discrepancy and, more importantly, develop a plan to address and prevent future events.³³

Other measures are developed to assess performance and promote accountability of an individual or organization. Accountability uses can include public reporting, accreditation, licensure, certification, pay-for-performance or incentive-based payment among others. More so than with quality improvement measures, it is critical that when used for accountability the

measure's desired performance be evidence-based, precisely specified for its data source, feasible and reliable to ensure that results can be repeated across those being measured, and validly reflect evidence-based care. Across many of these uses, **transparency** is considered a necessary component where the results of the measures are available to the public to enable comparisons and informed decision-making.³⁴ Examples of accountability programs with the goal of transparency are discussed later under Current Activities.

Once measures are put into use, analysis of changes in care process or patient outcomes should be reviewed to ensure **unintended consequences** are not occurring as a result of the measure or its implementation. Unintended consequences can include unknowingly encouraging treatment or processes that lead to misuse, underuse or overuse of services. For example, there were many concerns with the implementation by CMS of a measure assessing whether patients diagnosed with community-acquired bacterial pneumonia received appropriate antibiotics within four hours of arrival to the hospital. Analyses later showed that patients were more likely to receive an incorrect diagnosis resulting in inappropriate treatment due to the implementation of this measure.³⁵ Other times it is not the measure itself that results in negative results but rather its use for purposes such as payment reductions where it may result in individuals manipulating results or refusing to provide care to specific patient populations. These issues around whether the concerns are with the measure and its design versus the program in which it is used continue to be a source of discussion and unease across the quality community.

Key Players

There are many organizations that play various and sometimes multiple roles within the quality improvement and measurement space; some of the key players are described here.

Federal and State Agencies

Agency for Healthcare Research and Quality (AHRQ). A research arm of the HHS, responsible for developing the science of performance measurement.

Centers for Medicare and Medicaid Services (CMS). The branch of the federal government in the HHS that sets payment policy for the Medicare and Medicaid programs. CMS and its programs are integral to implementing the delivery system changes outlined in ACA and are discussed under the Current Activities section.

Medicare Payment Advisory Commission (MedPAC). 17-member independent commission established as part of Congressional legislation in 1997 that specifically advises Congress on the Medicare program through annual and other reports, including the quality of care provided under Medicare.

MedPAC specifically called for the development and implementation of a smaller set of population-based measures focused on health outcomes with individual provider measures potentially still in use due to the fee-for-service payment model.³⁶

While participation has steadily increased in CMS' EHRs programs, continued participation by providers year-to-year varied. Additional work remains to ensure reliable data results in improved outcomes.³⁷

Office of the National Coordinator for Health Information Technology (ONC).

Created as a part of HHS in 2004, this group coordinates the implementation and advancement of health information technology and electronic exchange of data across the U.S. health care system. ONC leads

or participates in many programs involving health information technology, including Meaningful Use and the Regional Extension Centers (RECs), as well as facilitating the development and testing of electronic Clinical Quality measures (eCQMs).

Quality Improvement Organizations (QIOs). Independent organizations that contract with CMS to assist states and health care providers to improve the care provided to individuals. In 2014, QIOs underwent restructuring with case review and monitoring activities separated from the quality improvement activities.³⁸ This restructuring introduced the Quality Innovation Networks (QINs) that work with providers, hospitals and other entities using data to improve patient care, particularly around national and local priorities. QIOs also work with the RECs to facilitate integration of health information technology at the point of care.

State Medicaid. Although Medicaid is partially financed by the federal government, each state designs, manages and partially finances its own program. Many states have instituted some version of pay-for-performance in their Medicaid programs.

Fifteen states publicly reported quality data on physicians as of December 2013.³⁹

United States Government Accountability Office (GAO). An agency that works for Congress as a nonpartisan, independent group to examine how taxpayer dollars are spent.

Independent Accrediting and Certifying Bodies

The Joint Commission. Accredits and certifies more than 20,000 health care organizations and programs across the United States and is one of the primary developers for hospital-based measurement.

National Committee for Quality Assurance (NCQA). Accredits health plans and manages the HEDIS® set of measures for health plan performance, supporting the collection and reporting of HEDIS® performance data, and the development and testing of new health care quality measures. NCQA has also developed programs around certification and recognition of other health care organizations and providers.

Other accreditors and certifiers include American Osteopathic Association (AOA) Healthcare Facilities Accreditation Program, DNV GL Healthcare, and Utilization Review Accreditation Commission (URAC).

Measure developers

Physician Consortium for Performance Improvement (PCPI).

Convened by the AMA, the PCPI develops evidence-based measures of clinical performance. It also provides methodological and implementation resources for physicians to use as they become familiar with performance measurement.

Members of PCPI include state medical societies, national medical specialty societies, AHRQ, CMS, the ABMS, and the Council of Medical Specialty Societies (CMSS). In recent years, the PCPI expanded its focus on advancing the science and development of electronic performance measures (eMeasures), fostering the use of clinical registries through the NQRN, and shifting the focus of measurement from clinical processes to clinical outcomes to drive improved patient care.

PCPI created the **National Quality Registry Network (NQRN)**, a volunteer-led groups with the goal of advancing the development and use of registries.

Medical Specialty Societies. Many societies are involved in measure development, either independently or through the work of the PCPI. Some develop measures for use in their clinical data registries and other public reporting and disease- and discipline-specific certification programs.

CMS, ONC, QIOs and other health care organizations are actively developing performance measures for multiple settings, providers and uses.

Collaborations and alliances

AQA Alliance. Created by the American College of Physicians (ACP), the American Academy of Family Physicians (AAFP), America's Health Insurance Plans (AHIP), and AHRQ from 2004-2014. This alliance had a multi-stakeholder membership that relied on collaboration. AQA activities focused on improvement of performance measurement and reporting of results that are meaningful to patients, employers, providers and others.

Bridges to Excellence (BtE). A program of the Health Care Incentives Improvement Institute (HCI3) focused on improving the care of chronic conditions in ambulatory care. Often used by health plans as a part of their pay-for-performance programs.

Consumer-Purchaser Alliance (CP Alliance). Membership of leading consumer, employer and labor groups with the goal of promoting the consumer and purchaser voice in developing and using meaningful, effective performance measures to define quality and affordable health care.

IHI worked with the state of Louisiana on the Birth Outcomes Initiative, where admissions to the NICU were reduced by 20% after eliminating elective deliveries before 39 weeks.⁴⁰

Institute for Healthcare Improvement (IHI). Not-for-profit organization dedicated to improving patient care worldwide for more than 25 years. Initiatives include but are not limited to the 5 Million Lives Initiative, Triple Aim, reducing early elective deliveries and reducing sepsis. IHI serves as frontline quality improvement educators and provides many

resources and topic-specific collaboration forums for implementers.

Leapfrog Group. Organization made up of purchasers of health care services, primarily businesses and business coalitions that provide health benefits to their employees. Leapfrog's focus is on safety, primarily in hospitals. The group has developed a set of patient safety standards, annually surveys hospitals on their compliance with these standards, and publishes this information on its Web site.

National Quality Forum (NQF). Not-for-profit membership organization focused on catalyzing health care improvements through consensus-based work on setting national priorities through the **National Quality Partnership** (formerly called the National Priorities Partnership), endorsing best practices and measures using the **Consensus Development Process**, and advising on the selection of measures for federal public reporting and payment-based programs through the **Measure Applications Partnership**.

Massachusetts Health Quality Partners, a member of NRHI, created HealthcareCompass.org. This website provides data on quality measures and patient experiences on more than 400 primary care practices to enable consumers to select providers.⁴¹

Network for Regional Healthcare Improvement (NRHI). National organization representing more than 30 Regional Healthcare Improvement Collaboratives with the goal of improving health and health care at the community level.

Quality Alliance Steering Committee (QASC). Collaboration of the quality alliances and other leading health care organizations. The High-Value Health Care (HVHC) Project is a primary activity of the QASC focused on ensuring that useful information on quality and cost is widely available.

Surgical Quality Alliance (SQA). Alliance of the surgical subspecialties and anesthesiology dedicated to coordinating surgical measure development and implementation such as the Consumer Assessment of Healthcare Providers and Systems Surgical Care Survey (S-CAHPS).

Business Alliances. These alliances operate on both the national and regional level, and are often referred to as "Business Groups on Health." The **National Business Group on Health** is based in Washington D.C. and serves as an advocacy group for major employers around national health policy. Based in San Francisco, the **Pacific Business Group on Health** has long been a leader in the public reporting of health provider performance. Business groups are membership organizations; most members are major employers seeking to improve the value of the health services they purchase for their employees.

Private Payers

America's Health Insurance Plans (AHIP). The advocacy group for private-sector insurers. AHIP is actively involved in many of the alliances and collaborations shaping how quality and cost are measured in health care.

Private Insurers. Run a variety of performance assessment and/or incentive programs for physicians.

BCBS of Massachusetts established the Alternative Quality Contract where physicians and others provided care based on a global budget and meeting performance measures. Results after two years showed improved quality at lower costs.⁴²

Medical Boards and State Licensure Boards

American Board of Medical Specialties (ABMS). Not-for-profit organization of 24-member boards responsible for certification of physicians for specific specialties.

Federation of State Medical Boards (FSMB). Organization of state medical boards responsible for medical licensure and regulation.

Current Activities

Given the growing interest in moving beyond internal quality improvement to promoting professionalism and accountability and increasing transparency on how well health care providers and organizations are achieving high quality at a reasonable cost, there are many initiatives and programs underway to move in this direction. This is an ever growing and evolving list but many fall within the themes of:

- aligning priorities and measures across payers and programs;
- embedding quality and professionalism into day-to-day practice;
- optimizing the best patient care possible through incentives and new payment models; and
- leveraging electronic data.

Aligning Priorities and Measures across Payers and Programs

Buying Value. 19-member group comprised of large health care purchasers focused on aligning health care payment models and delivery with the Medicare changes underway due to ACA with a focus on increasing quality, patient safety, coordination and communication.

Measure Applications Partnership (MAP). The NQF convenes a multi-stakeholder group of public and private stakeholders to advise the Secretary of HHS on which measures are appropriate for use in federal public reporting and pay-for-performance programs and promote alignment across the public and private sectors.

National Quality Partnership (NQP). The NQF convenes a 52-member partnership of national organizations that actively promote the development of the NQS and provide annual input to the Secretary of HHS. The NQP works with its member organizations and other health care providers to track progress on the NQS aims and priorities including CMS' Partnership for Patients and targeted areas on patient and family engagement, readmissions and maternal health.

Embedding Quality and Professionalism into Day-to-Day Practice

CMS' Center for Medicare and Medicaid Innovation (CMMI). This Innovation Center was established in the ACA to test and evaluate possible new delivery and payment models that encourage high quality of care while reducing costs. CMMI funds multiple pilots and demonstration projects such as Accountable Care Organizations, value-based purchasing with nursing homes, and retrospective or prospective bundled payments for hospitals, post-acute care providers and physicians.

Choosing Wisely®. Building on the professionalism work, this ABIM Foundation initiative focuses on providers being mindful of what tests or procedures are appropriate to prevent overuse of unnecessary testing and ensuring the patients make informed decisions about their care. Consumer Reports is now a partner in this effort to assist with the consumer aspect of this initiative, coordinating with key consumer organizations.

As of October 2014, more than 55 specialty societies developed materials for physicians on specific tests and procedures that physicians and their patients should discuss as a part of **Choosing Wisely®**. All are based on evidence and assist in determining what is the appropriate care for each patient. Patient-friendly materials are also available.⁴³

Maintenance of Certification® (MOC). ABMS and its 24 member boards incorporated a four-part process for providers to maintain certification. Part IV is related to assessment of practice performance and was incorporated into the MOC process in 2000.¹²

Maintenance of Licensure. In 2004, the Federation of State Medical Boards (FSMB) recognized the responsibility that state medical boards have in ensuring ongoing competency. By 2010, FSMB built this condition into maintenance of licensure and states are in the process of piloting this requirement through defined performance improvement activities.¹³

Optimizing the Best Patient Care Possible through Incentives and New Payment Models

CMS continues to serve as a primary driver to changes in payment and delivery models and incorporation of value-based purchasing of health care services based on incentives including:

- increasing transparency through public reporting of physician, hospital, nursing home and other providers' results, enabling patients and consumers to make informed choices;
- linking payment incentives to cost savings and increased quality of care (e.g., risk-based payment); and
- promoting accountability and coordination across systems of care.

Most CMS programs now involve public reporting of data on performance around cost and/or quality. Others require that providers achieve specific benchmarks around performance or at a minimum submit data. CMS releases proposed changes to these programs through the annual federal rule-making process to allow providers, organizations and others to comment prior to finalization. While only some hospital- or physician-specific programs for 2015 are highlighted in the tables below, these programs with incentives and/or penalties cross all settings and providers. Private health plans also have similar programs in place as health care moves toward value-based payment models.

CMS Programs for 2015

Hospitals	Public Reporting	Pay for Reporting	Pay-for-Performance
Inpatient Quality Reporting/Hospital Compare	✓	✓	
Hospital-acquired Condition (HAC) Payment Reduction Program	✓		✓
Hospital Readmission Reduction Program	✓		✓
Hospital Value-based Payment	✓		✓
Medicare and Medicaid EHR Incentive Program		✓	
Medicare Shared Savings Program		✓	✓
Hospital Outpatient Quality Reporting Program (HOQR)	✓	✓	

Physicians	Public Reporting of Results (Physician Compare)	Pay for Reporting	Pay-for-Performance
Physician Quality Reporting System	✓	✓	
Medicare and Medicaid EHR Incentive Program		✓	
Value-based Payment Modifier			✓

Accountable Care Organizations (ACOs). An ACO is “a set of health care providers—including primary care physicians, specialists, and hospitals—that work together collaboratively and accept collective accountability for the cost and quality of care delivered to a population of patients”.⁴⁴ Many view ACOs as a potential method of ensuring that the care provided is evidence-based and appropriate, while containing costs. As a result of ACA, CMS has several pilots funded through CMMI and the **Medicare Shared Savings Program (MSSP)** is built around this delivery model. The MSSP requires a group of providers to achieve specific benchmarks on quality and costs. If these are met, then the ACO can receive a percentage of the costs saved but this also means that each must be willing to accept a loss in income if the benchmarks are not met.⁴⁵

Several groups expressed concern when the ACO model was initially proposed that the costs required to ensure that adequate infrastructures would be in place to assist with care coordination would make it next to impossible for some smaller groups to participate. Recognizing this, CMMI is overseeing the **Advance Payment ACO Model** where, as of July 2014, 35 ACOs are receiving initial and monthly payments to assist with the costs to create the needed infrastructure.⁴⁸ The second pilot is the **Pioneer ACO Model** where

With many health plans moving in this direction as well, it is estimated at between 25-31 million people in the U.S. are receiving care through an ACO.⁴⁶ Evaluations of the first year of the Pioneer ACO Model show a reduction in overall spending per Medicare beneficiary with an estimated savings of almost \$147 million dollars.⁴⁷ Given the early stages of these projects with partners only beginning to develop the infrastructure and coordination needed, the results are viewed as promising.

groups that are more experienced with care coordination can move beyond the shared savings program to one that is payment based on the overall health of the population the ACO is serving. This model focuses not only on Medicare patients but also seeks to align incentives with private payers to have a more comprehensive view of the population for whom the organization provides care.⁴⁹

Patient-centered Medical Home (PCMH). In 2007, the AAFP, American Academy of Pediatrics, ACP, and the AOA put forward the principle of the PCMH where care and partnerships are facilitated across the patient, family and physician.

AHRQ now has defined and developed tools around several principles related to the patient-centered home:

- Comprehensive care – care is provided by multiple providers across settings and within the community; viewed as a team working together to provide the best care possible to the patient
- Patient-centered – views the patient as the core member of the team, incorporating the patient’s values, culture and needs into the care
- Coordinated care – coordinates care across settings and providers
- Accessible services – includes open access, extended hours, other vehicles of communication such as email and patient portals
- Quality and safety – demonstrated by providing evidence-based care and participating in quality improvement activities, clinical decision support, and other activities⁵¹

Many health plans, health systems, and physician practices implemented this model. Results continue to demonstrate the positive impact this model has on patient care and the Patient-Centered Primary Care Collaborative found use of the model reduced costs.⁵⁰

Leveraging Electronic Data:

Meaningful Use (MU). The HITECH Act created several new federal incentive programs to enable providers to leverage electronic data in a meaningful way, recognizing the potential positive impact that health information technology can have for individual patients to entire communities or populations. Meaningful use is defined as “using certified electronic health record (EHR) technology to:

- Improve quality, safety, efficiency, and reduce health disparities
- Engage patients and family
- Improve care coordination, and population and public health
- Maintain privacy and security of patient health information.”⁵²

In order to achieve results that improve outcomes, empower patients, leading to care that is transparent and efficient and data sets that enable research, ONC and CMS defined three stages beginning in 2011 with enabling data capture and sharing, demonstrating advance clinical processes by 2014 and achieving improved outcomes by 2016.⁵² The

Each provider and hospital must attest or report data at each of the three stages. As of 2013, 80% of hospitals and over half of providers implemented an EHR with many receiving incentive payments from CMS through the EHR Incentive Program.⁵³

Medicare and Medicaid EHR Incentive Program provides financial support to enable providers and hospitals to adopt and ultimately demonstrate meaningful use of EHRs.

Regional Extension Centers (RECs). RECs are managed by the ONC as a part of American Recovery and Reinvestment Act of 2009 (ARRA). As of July 2014, there were 62 centers dedicated to assisting single physician or small practices in meaningful use of EHRs. By July 2013, RECs assisted more than 140,000 providers. More than 80% of these practices implemented an EHR, 40% of which demonstrated meaningful use.⁵⁴

CMS approved over 35 registries across multiple clinical specialties to serve as QCDRs in the 2014 PQRS program. The inclusion of these registries is expected to enable increased participation by eligible providers due to the addition of measures within and across specialties and conditions.⁵⁵

Qualified Clinical Data Registry (QCDR). CMS continues to expand the various reporting options within its incentive programs in recognition of the various methods by which quality and cost can be collected and reported. One new method is through established registries that were often created for other purposes such as quality improvement or disease surveillance. Many physicians and other health care providers participate in existing registries such as the

American College of Radiology's National Radiology Data Registry and the American Society of Clinical Oncology's Quality Oncology Practice Initiative. Broadening inclusion of these registries, once determined that their purpose and measures aligned with CMS initiatives, provides opportunities for greater alignment and reduces burden. Starting in 2014, providers may report at least nine quality measures, including at least 1 outcome measure, that address at least three of the six NQS priorities using these approved registries to fully meet PQRS requirements.⁵⁶

National Quality Registry Network (NQRN). The AMA-convened PCPI convenes the NQRN, a volunteer-led multi-stakeholder group with the goal of advancing the development and use of registries. Created in 2011, NQRN developed tip sheets and guidance for those registries selecting a vendor for infrastructure development, a framework around how to leverage and build a robust registry over time and additional resources for registries and other interested groups. The group also works to identify gaps where registries might be needed to address national priorities, increase the efficiency and development time needed to build and maintain a registry, and create a learning network for registries.

Physician Clinical Registry Coalition. This coalition of physician-led registries formed to advocate for and achieve a legal and public policy environment that recognizes and supports the positive role that clinical data registries play in collecting, analyzing, and sharing clinical information, identifying trends and best practices, and improving clinical outcomes and quality patient care.

Challenges of Quality Improvement and Measure Development

Many challenges both for developers and implementers remain in the quality improvement and measure development spaces, particularly at the national and regional levels. While many individuals and organizations recognize the need for these activities, resources and funding remain limited. For example, in recent years Congress and others recognized the need for consistent funding to enable the development of measures across provider specialties, settings and data sources but dedicated resources are not yet readily available.

Minimizing the number of duplicative measures while still reflecting the quality of care delivered across settings and providers continues to be a major focus of developers and implementers. This focus has led to the increasing, yet incredibly challenging, job of harmonizing measures and specifications. Adequate expertise on measure development and testing expertise is vital; yet, resources to train additional staff are scarce. Protocols on measure testing to ensure that results are reliable, valid and appropriate for use in national, regional and other incentive programs are lacking. With the expansion to the use of EHRs, expertise in translating the general measure statements into logic and coding that is EHRs-friendly is accelerating.

Once the measures are developed, tested and selected for national programs, developers must still remain current on the requirements for inclusion in these programs and be as agile as possible to respond to these frequent changes. Many of the areas discussed in the Future of Quality Improvement and Measure Development section can also be categorized as the primary challenges to moving forward in quality improvement and measure development. Organizations including medical specialty societies, QIOs, and federal agencies continue to examine how to best address these concerns. That said, significant progress continues to be made in these areas.

Future of Quality Improvement and Performance Measurement

Significant work is underway to further efforts around instilling quality improvement and performance measurement into health care from the individual patient to the nation as a whole. That said, much work remains and there are several potential areas of focus that will continue to grow in the next few years.

Increasing emphasis on measuring the same outcomes and concepts across settings and providers. With the move toward value-based payment and acknowledgement that health care is provided not by individuals but across teams and settings, programs must ensure consistency in how performance measures are defined and captured. This requires that separate measures with the same focus be as harmonized as possible with the same definitions and coded to capture the same intent. Challenges exist with the data sources used across various providers and settings; yet, work continues to ensure that one measure can be applicable to multiple providers and/or settings to the greatest extent possible.

Greater emphasis on comparability of results across data sources and providers. As performance measures are developed that enable measurement of the same outcomes and concepts across providers and settings, it will begin to address concerns that 'apples are currently compared to oranges'. Many measures that are intended to examine the same concept in a hospital and a physician practice for example have not yet been tested to ensure that both yield comparable results. This comparability is essential; particularly, when results are used to determine whether an organization should receive incentives and when results are publicly reported.

Leveraging registries, EHRs, and other electronic forms of data. With the addition of reporting options such as EHRs and QCDRs and the transition of the Meaningful Use program to Stage 3 (improving outcomes) in 2016, use of these tools will continue to grow. More sophisticated efforts are underway to encourage patients to actively participate in

care through patient portals, enhance clinical decision support at the point of care, and leverage interoperability across providers and settings.

Enhancing the rigor of the measures through testing. Given the increased use of measures for accountability purposes, the need for developers and implementers to demonstrate the reliability and validity of the measures across settings, providers and data sources is rising. Many are exploring whether national or regional test beds could be established and how data from electronic sources (i.e., registries, EHRs) can be leveraged to meet these needs.

Developing and using measures that look at care from the patient's perspective – patient-reported outcomes. With increasing interest in including the patient as an active member of the care team, it is recognized that measures derived from the health care provider's perspective only provide insight into one aspect of the care experience. Developers are working on constructing measures that capture the patient's voice and experience related to aspects such as quality of life and functional status. Many are also examining current capabilities to implement these types of measures in ways that are collected and reported using electronic data, user-friendly, and timely.

Increasing focus on developing measures in gap areas. As discussed previously, groups such as the NQP are identifying from a multi-stakeholder perspective where quality and/or cost of care may be lacking. The goal is to ensure that a cohesive strategy around the value of health care exists rather than the many disparate efforts that led to duplication and rework in the past. Many groups including medical specialty societies and medical specialty boards actively participate in these processes.

Increasing integration of the concept of improvement into payment and other pay-for-performance programs. Several CMS programs resulting from the ACA include rewarding high performing providers but also recognize gains in performance if a provider is what would be considered a lower performer. This type of incentive model enables all providers to participate and potentially receive the incentive regardless of the baseline or initial performance level is for each individual or group.⁵⁷ The CMS Hospital Value Based Purchasing Program is an example of this strategy where hospitals are scored based on relative performance for each measure against peers or its own improvement over time.⁵⁸

Developing a culture of learning in health systems. It is recognized that systems with a health care entity must be implemented in which improvement on the quality and efficiency of care delivered will occur. This need was recognized by the IOM with a report on developing a culture of learning and included characteristics such as continuous improvement, teamwork, a concerted effort to include the patient, and the need for transparency of health care value.⁵⁹ Even with all of the initiatives and programs that are discussed in this primer, most systems have yet to achieve the improvements that are truly needed to deliver the highest, most effective and efficient quality of care desired in the United States. Many physicians and organizations are working currently to instill this culture and approach.

Shift from primarily focusing on improving and measuring the provision of health care services to also assessing the overall health of an individual or community. This last effort is perhaps the most important one to evolve with increasing awareness that individuals do not solely interact with the health care delivery system. There are many

other components involved in maintaining the overall health of an individual, community, population, and ultimately the nation and many are not directly linked with health care at this time. There is a growing interest in measuring and tracking improvement in the overall health of a population. These types of measures examine various factors including the resources available within a community and the physical environment where an individual or family lives.⁶⁰ As these measures are more widely developed implemented, they may be integrated into programs such as those around ACOs.

Conclusion

As discussed throughout this primer, quality improvement and performance measurement increasingly play critical roles in examining and advancing the care provided within the U.S. health care system. The quality of care is now assessed and individual providers and health care organizations informed of areas for improvement with more sophisticated data measurement systems. At the same time, delivery and payment models evolve to capture and use this information and ensure that the care provided is of high quality, appropriate to the needs and desires of patients, and delivered at a reasonable cost. Data is increasingly transparent, allowing patients to be informed and active participants in their care. The activities and organizations outlined in this paper are instrumental in creating a structure of evaluation and learning that will continue to enable health care systems to become more effective and reinforce the vital role that physicians play in meeting these expectations.

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Health Group, for his guidance in the revision of the Primer.

This Primer advances the strategic priorities of the Council of Medical Specialty Societies, that CMSS and its member societies will facilitate a “Culture of Improvement” in medical practice; and will promote Professionalism, including Altruism (putting the needs of patients first), Voluntary Self-regulation, and Transparency.

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Council of Medical Specialty Societies

Resources

Organization or Program	Website
American Board of Medical Specialties (ABMS)	www.abms.org
Agency for Healthcare Research & Quality (AHRQ)	www.ahrq.gov
National Quality Strategy (NQS)	http://www.ahrq.gov/workingforquality/index.html
Patient Centered Medical Home (PCMH) Resource Center	http://pcmh.ahrq.gov/page/defining-pcmh
America's Health Insurance Plans (AHIP)	www.ahip.org
AQA Alliance	www.ambulatoryqualityalliance.org
Bridges to Excellence (BtE)	http://www.hci3.org/node/1/
Buying Value	www.buyingvalue.org
Centers for Medicare & Medicaid Services (CMS)	www.cms.hhs.gov
CMS Accountable Care Organizations (ACO)	http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/
MSSP	http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/index.html?redirect=/sharedsavingsprogram/
Pioneer ACO Model	http://innovation.cms.gov/initiatives/Pioneer-ACO-Model/
Advance Payment ACO Model	http://innovation.cms.gov/initiatives/Advance-Payment-ACO-Model/
Center for Medicare and Medicaid Innovation	http://innovation.cms.gov
CMS – Hospital-acquired Condition (HAC) Payment Reduction Program	http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalAcqCond/index.html
CMS – Hospital Readmission Reduction Program	http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program.html
CMS – Hospital Value-based Payment (VBP)	http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/hospital-value-based-purchasing/index.html?redirect=/Hospital-Value-Based-Purchasing
CMS – Inpatient Quality Reporting (IQR)	http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalRHQDAPU.html

Organization or Program	Website
CMS – Hospital Compare	http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalCompare.html
CMS – Medicare and Medicaid EHR Incentive Program	http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html?redirect=/ehrincentiveprograms/
CMS – Physician Quality Reporting System (PQRS)	http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/pqrs/index.html
CMS – Qualified Clinical Data Registry (QCDR) Reporting	http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/Qualified-Clinical-Data-Registry-Reporting.html
CMS – Value-based Payment Modifier	http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/ValueBasedPaymentModifier.html
Choosing Wisely®	www.choosingwisely.org
Consumer Purchaser (CP) Alliance	www.consumerpurchaser.org
Federation of State Medical Boards (FSMB)	www.fsmb.org
Institute for Healthcare Improvement (IHI)	www.ihl.org
Institute of Medicine (IOM)	www.iom.edu
The Joint Commission (TJC)	www.jointcommission.org
The Leapfrog Group	www.leapfroggroup.org
Medicare Payment Advisory Commission (MEDPAC)	www.medpac.gov
National Business Group on Health (NBGH)	www.businessgrouphealth.org
National Committee for Quality Assurance (NCQA)	www.ncqa.org
National Quality Registry Network (NQRN)	http://www.ama-assn.org/ama/pub/physician-resources/physician-consortium-performance-improvement/nqrn.page
National Quality Forum (NQF)	www.qualityforum.org
Consensus Development Process	http://www.qualityforum.org/Measuring_Performance/Consensus_Development_Process.aspx
Measures Application Partnership	http://www.qualityforum.org/setting_priorities/partnership/measure_applications_partnership.aspx
National Quality Partnership	http://www.qualityforum.org/setting_priorities/npp/national_priorities_partnership.aspx

Organization or Program	Website
Network for Regional Healthcare Improvement (NRHI)	www.nrhi.org
Office of the National Coordinator for Health Information Technology	www.healthit.gov
Meaningful Use (MU)	http://www.healthit.gov/policy-researchers-implementers/meaningful-use-regulations
Regional Extension Centers (RECs)	http://www.healthit.gov/providers-professionals/regional-extension-centers-recs
Pacific Business Group on Health (PBGH)	www.pbgh.org
Physician Consortium for Performance Improvement (PCPI)	www.physicianconsortium.org
Quality Alliance Steering Committee	http://www.brookings.edu/about/centers/health/qasc
Quality Improvement Organizations	http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityImprovementOrgs/index.html?redirect=/qualityimprovementorgs/
Quality Improvement Organizations (QIOs)	http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityImprovementOrgs/index.html
Surgical Quality Alliance (SQA)	http://www.facs.org/ahp/sqa/
U.S. General Accountability Office (GAO)	www.gao.gov

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