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# Outcomes Evaluation: Striving for Excellence in Ambulatory Care Pharmacy Practice

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## Abstract

**Purpose.** Key issues in measuring and improving the quality of health care are discussed with an emphasis on applying quality-improvement principles in ambulatory care pharmacy practice.

**Summary.** The various perspectives on health care quality (including those of patients, providers, and payers) are reviewed, and the basic principles of quality measurement and improvement are outlined. Many health care practitioners believe that the most effective way to improve health care is through balanced consideration of the structure, process, and outcomes of health care services. Overall progress in improving the quality of health care has been slow, in part because of lack of patient engagement, use of improvement methods that have not been fully tested, and giving inadequate attention to the systems of providing care. Ongoing efforts of national quality-improvement organizations are reviewed, including those of the government, accreditation bodies, payers, and professional associations. Of special interest in pharmacy is the work of the Pharmacy Quality Alliance, the Patient Safety and Clinical Pharmacy Services Collaborative, and the Center for Pharmacy Practice Accreditation. Ambulatory care pharmacists have important opportunities to improve health care quality, including by reducing adverse drug events, improving medication reconciliation and transitions of care, fostering medication adherence, improving patient medication self-management, providing immunization services, and reducing disparities in access to medications.

**Conclusion.** To be fully effective, the national priority of improving the quality of health care must penetrate the work of individual health care practitioners, including ambulatory care pharmacists.

## Introduction

It is highly probable that all of us have had at least one experience of being a patient or caregiver. Whether you or a loved one suffer from a chronic illness, had an acute medical event, got a prescription filled, assist a parent or grandparent, or experienced well-child visits, you certainly expected to receive quality services. Reflecting on those encounters, did you actually receive services at the quality you expected? How would you make that determination? What does a quality medical encounter look and feel like? Is it the wait time, friendliness and empathy of the providers, or improvement in how you feel? Or is it that you have a better understanding of your medical condition and how to manage it? How do you know if you received the right information, the right test, and the right therapy?

As a health care professional, your understanding of our complex health system may allow you to definitively evaluate your experience. Consider, however, those without the inner knowledge of the health system such the patients and caregivers you encounter daily in your practice. How would most of them answer the above questions? In my practice, I witness failures in quality almost on a daily basis, and I suspect that is the case for most pharmacists. Gaps in quality are common, and quality failures are so frequent and overwhelming that we find ourselves impervious to the minor ones and responding only to the most egregious occurrences.

I hope this exercise of reflecting on the quality of your own personal experiences has you contemplating and raising some very important questions. What exactly does *quality* mean? There are numerous perspectives to consider in the gamut from patients to payers. Whose version of quality should we focus on? If we consider only the patient's perspective, is that sufficient? The amount of information, unanswered questions, and demands in the quality arena are quickly escalating. The enormity of the task at initial glance is quite overwhelming, and pressures continue to mount from the government, payers, and work sites for proof that all

providers are delivering quality services. The stakes may be even higher for ambulatory care pharmacists who are forging new roles in practice models that are not yet fully tested.

There is much evidence for the need to improve quality in the U.S. health care system. The rhetoric on quality is intensifying, and the path to achieving quality and, in particular, quality around medication use, is not very clear. Continuously improving the quality of service to our patients needs to be a high priority. The aim of this paper is to improve the understanding of this enormous topic among ambulatory care pharmacists so they can effectively address it in their daily practice.

**Defining quality**

There is no consensus on the definition of *quality* in health care.[1-4] To elderly confused patients, quality may mean that the provider was kind to them; to busy executives, quality may mean a short waiting time or minimal time for an appointment carved out of their busy day; to physicians, quality may mean correct diagnoses; and to pharmacists, quality may mean that the recommended therapy achieved the desired outcome. A health administrator may look at efficiency of clinical services, and the payer may view generic medication use as a marker of quality.

The Institute of Medicine (IOM) defines quality as the degree to which health services for individuals or populations increase the likelihood of desired health outcomes that are consistent with current professional knowledge.[5] The beauty of this definition is that it connects quality to the experiences of individual patients and their outcomes, where it must start, and broadens the scope to populations, which is the measuring stick for most judgments about quality. This understanding of individual patient needs that seamlessly broaden into population needs is important in building successful quality improvement programs.

**The basics of quality measurement and improvement**

Ambulatory care pharmacists must stay abreast of many quality improvement initiatives. All are important in order to prove value and sustain growth of ambulatory care services. The first step is to gain a basic understanding of the language, theory, and current standard processes for quality improvement.

**Quality primer.** Twenty-five years ago, Donabedian proposed a construct to determine and measure quality in health care around three domains that remain in use today[6]:

- Structure—how resources and systems effect patient care,
- Process—how the provider-patient interactions and the care and services provided affect the patient, and
- Outcome—what happens to patients.

Outcome is further categorized by the ECHO model (economic, clinical, and humanistic outcomes). These domains are used in determining what needs to be improved and which measures or sets of measures should be applied.

To execute your quality program, evaluate and consider the three methods frequently used by health care organizations.[7] The *lean method*, derived from the Toyota Motor Corporation, uses patient outcomes as a goal and then focuses on processes to eliminate waste or any nonvalue-added activities. The optimum sequence for delivery of services to achieve efficiency and quality is developed. Structure and process measurement is used to determine what components of care are critical to producing the desired patient outcome.

*Six-sigma* is a method focused on reducing variation and defects within processes in order to consistently create a desired outcome. Six-sigma is a statistical term of measurement of the level of defects per million opportunities. Six-sigma represents nearly an error free process. The steps in the six-sigma process are (1) identify and define what needs to be improved; (2) measure by collecting data; (3) analyze the results; and (4) use creative solutions to improve and

then control the process with policies, guidelines, and strategies. Standard order sets are an example of the six-sigma method. (In the hospital setting, the lean and six-sigma methods may be more effective than other means of addressing complex clinical quality and safety issues.[8])

Perhaps the most widely used method of quality improvement in health care is one based on trial and learning in a rapid cycle of improvement, or the Plan, Do, Study, Act cycle (*PDSA cycle*). This method utilizes three key questions:

- What are we trying to accomplish?
- What change can we make that will result in improvement?
- How will we know that a change is an improvement?

Questions flow into a cyclic method of steps (plan, do, study, act). In the "planning" stage, aims are established based on what you are trying to accomplish, strategies for change are developed, and measures are chosen that will determine if you achieved your aim. The "do" stage is characterized by implementing the change, which is followed by the "study" phase where the change is tested using the defined measures. In the "act" phase, the results from the study phase are used to re-enter the cycle for further improvement.

A search for better methods continues in response to the slow pace of quality improvement in health care. Kleinman and Dougherty have recently proposed a model for quality improvement that is more patient- and practice-centered.[9] They break down the patient care process domains into actions of quality. The first action is the patient entering the system through awareness by the patient or from a provider. The second action is an assessment that care is needed for the patient. The third action is where a management plan is developed, coordinated, executed, and reassessed. Superimposed on the actions of quality are interpersonal tasks that involve the patient. Quality and patient outcomes are influenced by (1) how well information was obtained from the patient (i.e., the patient as a data repository); (2) how much

the patient's beliefs, preferences, culture, etc., were considered (i.e., the patient as an individual); (3) how much the patient participated in decision-making (i.e., the patient as a person); and (4) how well the patient participates in the plan (i.e., the patient as a partner). This method suggests that to improve quality we must measure the quality of each interaction the patient has with a provider and an organization. This interesting approach, which includes the patient's role in attainment of quality, deserves further study.

**Applying the principles**

Use of well-established quality domains, the identified outcome categories, or the Klleinman-Dougherty[9] quality model to critically look at your particular care delivery system will assist you in identifying areas that need improvement. Which method you ultimately use for implementation of your quality improvement plan will depend in part on the culture and structure of your organization. The lean and six-sigma methods tend to focus on structure and process, and to accomplish the goals may require a larger team and implementation at a higher organizational level. For the ambulatory care practitioner, the PDSA cycle is manageable for a small or solo practice and can be used for an improvement issue in any of the domains of quality, often over a short period of time. The key to a successful quality program is incorporating the chosen quality improvement process into the daily workflow. Consider using technicians and students to support a quick process of data collection for your patient visits. PDSA lends itself to a busy environment and may be the optimal process depending on your organizational goals, environment, and resources available.

Over the past few years there has been an increased focus on outcomes versus other domains of measurement. Many stakeholders are interested in knowing that a positive outcome was consistently achieved rather than knowing exactly how it was achieved. There is much

heterogeneity in patient populations and the practice strategies to meet their needs; therefore, it is difficult to make structure and process measurements universal. Focusing purely on structure or process without measuring outcome may yield an inadequate result. Outcome measures are critical and need to be part of any measurement plan. To put it simply, outcome measures are the transparent data regarding your services that must be seen by all—patients, other providers, payers, and others.

Likewise, at the practice or organization level, focusing only on outcomes is not advisable. When focusing only on one domain, the chances of overall improvement are diminished. For example, if reduction in blood pressure is an outcome goal, but you did not pay attention to structure (e.g., training staff to measure blood pressure and reduce excessive patient wait times), you may not achieve optimum outcomes. Certain outcomes are difficult to measure due to rare occurrence, in which case process becomes the optimal measurement. An example is immunizations. It would not be desirable to wait for an outcome that shows decreased rates of chicken pox infection but rather to measure the process of varicella immunization and assume it is preventing chicken pox. A common strategy in the business world is the use of a balanced scorecard where one or two measures are selected in each domain around an improvement focus. For example, if improvement is focused on medication adherence, at least one measure representing structure, process, outcome, and financial issues are incorporated into the plan.[10]

**Essential characteristics of quality measures.** The most influential place for quality to occur and ultimately move the U.S. health system toward improvement is at each patient encounter. This highlights the importance of each practitioner's commitment to quality. Every measure you select must possess three qualities.

First, the measure must be meaningful to you and your patients. Measure an area that

is known to need improvement or that is universally recognized as problematic, such as medication adherence or adverse drug events. If you know that a measure is for something that is not a problem in your practice, do not measure it.

Second, the measure must be feasible. Are the data readily available? How disruptive will collecting the data be in the normal process of care? How timely will the analysis be? What resources are needed, and do we have them? The measures that yield positives answers to these questions should rise to the top.

Third, measures should be actionable. You must be able to use the results you get. Make sure the driver of your performance is something that you can change. If you need to go through your organization's hierarchy to make the change, be sure to get leaders' buy-in so that they will allocate the resources you may need to implement changes based on the results of quality measurement.

The entire process of quality measurement requires careful and critical thought at the practice level—from determining improvement goals, choosing measures, and evaluating results. Avoid using a turnkey approach to measurement that bypasses any critical analysis of your program. For example, as a provider I may lower the average LDL to 90 mg/dL in my population with diabetes through patient education and promoting improved medication adherence. My colleagues providing the same services may lower the LDL to 105 mg/dL in their particular population, also with diabetes. On the surface it might be concluded that that I provide a higher quality service. However, if in my population the LDL level I started with was 105 mg/dL and in my colleagues' population it was 180 mg/dL, who has made the greater quality impact? The greatest improvement in patient morbidity and mortality would probably occur in the population that did not meet the measurement goal but that had the greatest reduction in the quality gap.

Close scrutiny and understanding of what you are measuring and how the result applies to your clinic setting is mandatory. The example presented emphasizes the need for measures to be of high quality and truly measuring outcomes.[11] It highlights the need for further analysis and research in the development and use of measures, especially for many that are currently considered a gold standard. A stronger partnership between academic research, clinical care, and quality measurement needs to be built.[12,13]

**Barriers to quality improvement.** There are likely to be barriers to your quality program, most notably a lack of technology to support efficiency and timeliness of measurement. Attribution of outcomes specifically to ambulatory care pharmacy services may also be problematic, particularly in interdisciplinary team-based care. This raises the question of whether measurement should reflect the performance of the team versus that of the individual practitioner. Nonetheless, many ambulatory care pharmacists will be asked to demonstrate their specific contribution to quality of care to justify their role. Research and innovative ideas are required to resolve this conundrum. Application of quality improvement principles in health care is a relatively new pursuit, and advancement in this application will depend on the creativity of practitioners and their learning from each other.

### Limited progress in health care improvement

To adequately approach improvement, it is important to understand where one is starting from. Unfortunately, for the U.S. health care system, the report card on quality improvement is dismal, especially when considering the amount of resources devoted to health care. The eye opener for the health care industry was the 1999 IOM report *To Err Is Human: Building a Safer Health System,* which brought to everyone's attention the extent of harm being done to patients.[14] More than 100,000 patient deaths in hospitals were occurring yearly with a major source of error

involving medications. Since then, the IOM has published a series of reports focusing on quality and health care, including the 2013 report *Closing the Quality Gap: Revisiting the State of the Science.*[15] This report describes how quality and optimal patient outcomes remain elusive in the U.S. health care system regardless of the population or type of service evaluated. For every patient that receives optimal care, one does not.[16,17] In 2012, the Agency for Healthcare Research and Quality (AHRQ) reported that although overall health care quality is improving, it is occurring at a very slow pace.[18] Quality patient care and access remain suboptimal and inconsistent, with worsening access issues and no improvement in health care disparities. In 2000, the United States ranked 38th in health status among industrialized nations,[19] and two reports in 2013 show little improvement in that ranking.[20,21]

Limited progress also has been made in improving medication-related problems. A recent report suggests that nonadherence to medication, suboptimal use of evidence-based drug therapy, antibiotic misuse, medication errors, poor generic utilization, and mismanaged polypharmacy in the elderly is a $200 billion annual problem.[22] In 2003, Gandhi's classic article highlighted the high rate of preventable adverse drug events in the ambulatory care setting. Ten years later, there appears to be little improvement as three recent studies report similar rates of adverse medication events.[23-26] Although there are pockets of improvement in medication adherence with rates up to 80% or higher, a 2012 report from CVS/Caremark Research Institute suggests that the majority of medication adherence rates remain in the 50% to 60% range.[27]

Patients and the public are not blind to quality issues in health care. Adult Americans in a poll conducted several years ago by the Harvard School of Public Health believed the quality of U.S. health care is average at best.[28] Over half the respondents graded quality of care as a C or D, and 1 out of 10 gave a failing grade. The poll also suggests that patients are beginning to

consider quality of care in choosing providers.

There are no clear answers and many theories as to why our health care system is struggling to improve. One theory is that we rarely ask patients what their preferences are for services, and unless we address what is important to them, we will not advance quality metrics.[12,29] For example, there are many iterations of a medication list but few reports[30,31] on what patients want in such a tool. Patient engagement and patient wishes are expected to become more important in quality measurement.

Another theory is that the application of rigorous science in evaluating quality improvement processes is being trumped by pressure to implement new but untested methods and ideas. Improvement of clinical systems is not a research priority for many academic institutions.[12] Concern exists by others that there is too great a reliance on surrogate markers and not enough on the drivers of change.[11] For example, how can we truly achieve quality care for the diabetic population by focusing only on vigilant therapeutics and patient monitoring and not on issues related to transportation, food advertising, workplace design, or other underlying societal causes of the epidemic? An additional opinion is that the health care quality industry has not identified the highest priorities for measurement, such as patient safety, or has not concentrated on using measures that are of highest value.[9] As one IOM report states, if banking were like health care the automated teller transaction would take days or longer due to unavailable or misplaced records; if home building were like health care, carpenters, electricians, and plumbers each would work off different blueprints with very little coordination.[32] As health care providers, we can articulate the problems; the difficulty is improving at an acceptable pace.

**Ongoing efforts to improve**

Many organizations are working on improving the quality of the nation's health

system. Collectively, they are developing measures or measurement concepts, using sets of measures for payment or accreditation, and recommending optimal measures for the various segments of health care. These groups include many of the professional organizations such as ASHP and the following bodies, listed here by their initials: NQF, NCQA, TJC, PQA, PCPI, CMS, PQRS, AHRQ, HEDIS, CPPA, URAC, PCPCC, and IHI. Thus far, there has been a lack of coordination among the groups, which has led to a plethora of measures and multiple entities holding organizations and providers accountable for a variety of quality measures. The National Quality Strategy, mandated by the Affordable Care Act, has set priorities for quality improvement in health care and has developed a plan for achieving these priorities (ahrq.gov/workingforquality/about.htm). Although a relatively young science, quality improvement is causing measurement weariness, cost concerns, and questions about the value that various initiatives are actually having on quality. Several groups have recognized this concern and are working toward alignment, prioritization, and grouping of measures to ease this burden.

**Overview of national quality organizations in health care**

**Government-related organizations.** The federal government and government-supported organizations are extremely influential in dictating the direction of the quality movement. Many resources from the federal government are readily available on the Web. Governmental efforts start with the Triple Aim, which sets the agenda and approach to improving quality through three tenets:

- Better care for individuals,
- Better health for populations, and
- Reducing per-capita costs.

Better care for individuals is driven by the six dimensions of health care performance from the IOM report *Crossing the Quality Chasm* and the six priorities of the National Quality Strategy, which are listed in Table 1 below.[33,34]

*Agency for Healthcare Research and Quality (AHRQ).* AHRQ, a body within the Department of Health and Human Services (HHS), is the primary federal agency responsible for quality efforts. AHRQ's mission is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. A yearly report delivered to Congress outlines the National Strategy for Quality Improvement in Health Care based on AHRQ work.[35] The strategy sets the agenda for government health agencies and signals future direction for government initiatives on quality. The 2013 report sets specific priority measures around the six domains of health care performance and aspirational targets for each measure. The work of ambulatory care pharmacists directly affects a number of these measures (see Table 2 on the next page). These measures are doubly important because they may be tied to future pay-for-performance initiatives.

Additionally, AHRQ has developed a collection of 100 evidence reports over the past nine years titled *Closing the Quality Gap Series.*[34] Many of the reports relate to ambulatory care, including chronic conditions such as diabetes and osteoporosis and medication adherence and medication management. The reports do not define quality measures but can be used to guide your practice around best evidence.

Table 1.
**Two Perspectives on Health Care Performance Improvement**

| IOM Dimensions | National Quality Strategy |
|---|---|
| Safety | Patient safety |
| Effectiveness | Clinical processes and effectiveness |
| Patient-centeredness | Patient and family engagement |
| Timeliness | Care coordination |
| Efficiency | Efficient use of health care resources |
| Equity | Population and public health |

Table 2.
**2013 National Strategy Priority Measures Important to Ambulatory Care Pharmacists**[22]

| Measure Focus | Measure Name/Description | Baseline Rate | Most Recent Rate | Aspirational Target |
|---|---|---|---|---|
| Hospital Readmissions | All-payer 30-day readmission rate | 14.4%, based on 32.9 million admissions | 14.4% based upon 32.7 million admissions in 2011 | Reduce all readmissions by 20% by the end of 2014 |
| Decision-making | People with a usual source of care whose health care providers sometimes or never discuss decisions with them | 15.9% | Update available in Fall 2013 | Reduce to <10% by 2017 |
| Aspirin Use | Outpatient visits where adults with cardiovascular disease are prescribed/maintained on aspirin | 47% | 53% | Increase to 65% by 2017 |
| Blood Pressure Control | Adults with hypertension who have adequately controlled blood pressure | 46% | 53% | Increase to 65% by 2017 |
| Cholesterol Management | Adults with high cholesterol who have adequate control | 33% | 32% | Increase to 65% by 2017 |
| Smoking Cessation | Outpatient visits where current tobacco users receive tobacco cessation counseling or cessation medications | 23% | 22% | Increase to 65% by 2017 |
| Depression | Percentage of adults reporting symptoms of a major depressive episode in the last 12 months who receive treatment for depression in the last 12 months | 68.2% | 68.1% for 2011 | Increase to 78.2% by 2020 |
| Obesity | Proportion of adults who are obese | 35.7% | Update available in 2014 | Reduce to 30.5% by 2020 |

The National Quality Measures Clearinghouse (NQMC) is a public resource for evidence-based quality measures housed by AHRQ.[36] More than 8000 measures currently reside in the database. Despite this large number, the value of this site is that the measures are categorized, providing information to evaluate measures for validity, importance, scientific soundness, and feasibility. The search functions are user friendly, provide a variety of options, and can drill down to specific results. In your practice, once you have identified areas of interest to measure, the ability to search this site for tested measures in those areas makes the NQMC an extremely valuable resource.

*Institute of Medicine (IOM).* A number of organizations, although independent, have strong affiliation with the federal government and origins that stem from laws or other government initiatives. In 1970, the IOM, an independent nonprofit organization, was established under the National Academy of Sciences. The IOM's role is to work outside government to provide unbiased and authoritative advice to decision makers and the public. Much of its work is commissioned by the government. The IOM has nearly 200 reports on health care quality and patient safety, including reports discussed above. Its most recent report, *Core Measurement Needs for Better Care, Better Health, and Lower Cost: Counting What Counts*, addresses the lack of alignment and prioritization of measures and proposes a set of core measures around the Triple Aim.[37] The report provides an excellent framework for organizations or practices to build a core measure set that aligns with the Triple Aim and the National Strategy for Quality. Practitioners new to quality measurement can build their measurement process around this framework, and those who are experienced with quality measurement may want to organize their program in this framework to ensure better comparison with the performance of others.

*Pharmacy Quality Alliance (PQA)*. PQA is one of four quality alliances (i.e., Hospital Quality Alliance [which is responsible for the Hospital Compare System], Ambulatory Quality Alliance, and Long-Term Care Quality Alliance) established as public–private partnerships to assist CMS and health care in general in assuring provision of quality services to Medicare beneficiaries and all patients (see Table 3 below). PQA was established following the passage of the Medicare Modernization Act of 2004. Its mission is to improve the quality of medication management and use across health care settings with the goal of improving patients' health. Through its workgroups comprised of multidisciplinary representatives from member organizations, measure concepts are developed, tested, voted on, and moved forward for public use. Although the overarching focus is on medication use through the continuum of care, PQA has a clear emphasis on the work of pharmacists in patient care. The Medicare Part D star measures on medication adherence and appropriate use of medications in the elderly are products of PQA's work. PQA maintains a library of measures and measure concepts on its Web site.

*Quality Improvement Organizations (QIOs)*. QIOs are independent organizations contracted with CMS to improve the effectiveness, efficiency, economy, and quality services

Table 3.
**Quality Alliances in Health Care**

| Alliance | Date Established | Health Care Site Focus |
|---|---|---|
| Hospital Quality Alliance (HQA) | 2002 | Hospitals |
| Ambulatory Quality Alliance (AQA) | 2004 | Medical office practices |
| Pharmacy Quality Alliance (PQA) | 2006 | Medication use |
| Long-Term Quality Alliance (LTQA) | 2009 | Extended care facilitates |
| Quality Alliance Steering Committee (QASC) | 2009 | Promote alignment and synergy among the alliances |

delivered to Medicare beneficiaries. There is a QIO in every state (http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1144767874793). Through scope of work contracts with CMS, the QIOs work to monitor, educate, and assist providers and patients in the delivery and receiving of quality services. Currently, QIOs' 10th Scope of Work contract with CMS has the following ambulatory care-related initiatives: (1) patient and family engagement; (2) reduction of hospital readmissions by 20%; (3) reduction of adverse drug events; (4) disease prevention through improved screening and immunizations; and (5) prevention of cardiovascular disease. QIOs work with any group of stakeholders, including pharmacists, to provide services to Medicare beneficiaries in their state.

*Patient Safety and Clinical Pharmacy Services Collaborative (PSPC).* With the current initiative to reduce adverse drug events, the QIOs have partnered with pharmacy through the PSPC.[38] The PSPC was initiated by the Health Resources and Services Administration (part of HHS) six years ago to address adverse medication events for uninsured, isolated, or medically vulnerable patients served by "safety-net" providers such as federally qualified health centers (FQHCs). The teams use the PDSA process to achieve the PSPC goal of integrating clinical pharmacy services in the safety-net setting and improve patient safety and health outcomes. Results from the over 250 participating teams on quality outcomes to date are impressive.[39,40] Membership has expanded beyond safety-net providers to include any multidisciplinary, community-based group with high-risk patients, who either have integrated or are able to integrate clinical pharmacist services and are willing to work on the "change package" of the program. Ambulatory care pharmacists who are initiating new services or those with minimal experience in quality improvement may find great value in participation in this program. This multidisciplinary grassroots process may be a good model for accelerating overall

improvement in health care.

*National Quality Forum (NQF).* In 1999, a Presidential commission created the NQF for the purpose of reviewing health care quality and consumer protection. NQF is a publicly and privately funded membership organization whose mission is to (1) build consensus on national priorities and goals for health care performance improvement; (2) endorse consensus standards for measuring performance and public reporting; and (3) promote attainment of national goals through education and outreach. Measure-endorsement is a primary role of NQF. NQF-endorsed measures must (1) be in the public domain; (2) be fully tested for reliability and validity; and (3) have importance, scientific merit, feasibility, and usability when compared against competing similar measures. A level of scientific rigor is assured with NQF-endorsed measures. Endorsed measures are easily found within the NQMC database. Recently, through a contract with the U.S. Department of Health and Human Services, NQF is charged to (1) create a portfolio of quality and efficiency measures for HHS use in reporting and improving health care quality and (2) prioritize and synergize existing measures through the Measure Applications Partnership (MAP). The goal of MAP is to develop measures that (1) span programs, care settings, analysis levels, and populations; (2) are the best available; (3) meet established priorities; and (4) are the recommended measures to be used for performance measurement and payment. MAP also informs federal decisions on quality measures to use in payment programs. Many health policy makers hope that this work will solve some of the current issues around lack of coordination with measures. Keeping abreast of MAP is important because it will affect the future work of all health care organizations and providers, including ambulatory care pharmacists.

**Accreditation organizations.** Accreditation organizations are involved in promoting quality and safety through creation of standards and associated measures through internal

systematic development and testing. Health care providers and organizations that receive the respective accreditation get a "seal of approval" that they have met the quality and safety standards set forth by the accreditation body. Payers, including the government, use accreditation to select those health care entities they wish to do business with either as sole or preferred providers. Additionally, payers may incentivize providers by offering additional payment to entities who have achieved accreditation. This is a competitive and growing market with great interest in expanding into pharmacy-related services.

*National Committee for Quality Assurance (NCQA).* NCQA was founded in 1979 by the managed care industry to review preferred provider organization (PPO) plans and health maintenance organizations (HMOs). To serve a broader scope, it "re-established" itself in 1990 as a private, independent nonprofit health care quality oversight organization. NCQA's mission is simply to improve the quality of health care. It is best known for creation of the Healthcare Effectiveness Data and Information Set (HEDIS) measures for employers to evaluate the health plans they use for employee benefits. Ninety percent of health plans as well as Medicare and Medicaid use HEDIS measures to evaluate their performance, dimensions of care, and service. Consequently, providers who contract with those health plans have the responsibility of meeting the applicable measures. The HEDIS measures are updated annually.[41] A significant portion of the 2014 HEDIS measures revolves around medication use and the patient care work of pharmacists in the ambulatory care setting. Since the patient population of most health systems is affected by payers using these measures, it is important for ambulatory care pharmacists to review and consider these measures in their work.

NCQA also provides accreditation, certification, and recognitions programs, including accountable care organization accreditation, patient-centered medical home (PCMH) recognition,

and a diabetes-management recognition program. The PCMH recognition program has generated high interest because a number of payers provide payment incentives to ambulatory care organizations that achieve recognition. NCQA is currently working to synchronize the PCMH standards with "meaningful use" (see below) measures from CMS. Within PCMH standards, measures for coordination of care, medication management, population health, and care planning are relevant to ambulatory care pharmacists.

*Center for Pharmacy Practice Accreditation (CPPA).* The newest member to this field is CPPA, established in 2012 through the efforts of the American Pharmacists Association, the National Association of Boards of Pharmacy, and ASHP. Its mission is to assure that patients receive high quality, safe, and efficient pharmacy care by raising the level of pharmacy services and practice through accreditation. The initial accreditation program offered by CPPA is for community pharmacy practice. The organization plans to expand its accreditation products. CPPA's aim is to assure payers that accredited pharmacies are providing patient care services of high quality.

*Other accreditation bodies.* The Joint Commission (TJC) and URAC are working to establish a larger presence in ambulatory care. To date, most of TJC's work has been in nonpharmacy ambulatory care settings (e.g., outpatient surgery), but it does offer accreditation for medical practices and a certification for primary care medical homes. URAC is an accreditation organization that grew out of the utilization review industry. It provides a wide variety of accreditation programs, including accountable care organization (ACO) accreditation and patient-centered medical home (PCMH) achievement under its Provider Care Integration & Coordination Accreditation Program. URAC has developed a number of pharmacy-related accreditation offerings in the managed care setting for pharmacy benefit and prescription drug

plans. Under its pharmacy quality management programs, URAC covers drug therapy management, mail service pharmacy, pharmacy benefit management, and specialty pharmacy accreditation. In 2012, URAC also developed a community pharmacy accreditation program for the purpose of differentiating community pharmacies that have the structure and processes to successfully integrate into a PCMH or ACO.

Comprehensive accreditation of ambulatory care pharmacy services is just beginning to evolve. How accreditation will affect this field is yet to be determined. Surprisingly, research studying the effect of health care organization accreditation on health care quality and patient outcomes is relatively scant with mixed results at best.[42,43] Nonetheless, accreditation is firmly established in the health care industry and is yet another area that ambulatory care pharmacists must stay informed about.

**Payers**. Payers have an obligation to their enrollees to assure they are paying a fair price for quality services; thus they have a vested interest in developing quality-related incentives. Both private payers and the government have adopted pay-for-performance (P4P) and value-based purchasing initiatives. P4P is a program that provides (1) bonus payment to providers if they meet or exceed quality or performance measures or (2) financial penalties to those who do not achieve certain goals or cost savings or (3) both.[44] Value-based purchasing plans are health insurance designs that encourage, through payment incentives, use of evidence-based, high-value services that produce desired outcomes and discourage use of services that are considered low value or without evidence; the plans may also incentivize enrollees to adopt healthy lifestyles and select high-performing providers.[45,46]

*Medicare.* There are four major Medicare quality programs in ambulatory care. The Physician Quality Reporting System (PQRS) is a voluntary program with attached financial

incentives for eligible Part B providers to report to CMS on a sub-set of self-chosen measures out of the 310 available.[47] Starting in 2015, PQRS will be a mandatory program requiring at least one valid measure or measure group to be reported by Part B providers. Incentive payments will be eliminated, and those who do not participate will receive a 1.5% reduction in payment. Many of the measures in this set are related to medications and medication management, offering an opportunity for ambulatory care pharmacists to assist Medicare Part B providers in achieving the goals set by this program.

Medicare Part C and Part D plans, which utilize contracted payers to coordinate medical and prescription services (Part C) or just prescription services (Part D) include Five Star Quality Ratings programs. The programs use more than 50 measures to evaluate the performance and quality of services of the participating plans for the purpose of assisting beneficiaries in picking the best plans and also determining payment and participation in Medicare. The plans are rated on a five-star weighted system with financial and other incentives for achievement of four or five stars and penalties for less than three stars. Within the star ratings are five medication measures developed by PQA. Three measures relate to medication adherence for chronic medications in the treatment of hypertension, diabetes, and hyperlipidemia; appropriate medication use in diabetes; and high-risk medication use in the elderly. The weighted scores of medication measures compose nearly 50% of the calculated star rating. Many ambulatory care pharmacists are using these measures to help their organizations assist their contracted plans in improving their star ratings.

Reporting of clinical quality measures is also part of the "meaningful use" requirements of CMS under the American Recovery and Reinvestment Act of 2009. The measures, based on national priorities, include morbidity and mortality of beneficiaries, conditions of

disproportionate cost, and those that would enable CMS to make comparisons across the provider community.[48] Starting in January 2014, Medicare Part B eligible providers must report at least three months of data on nine of the 64 approved measures that cover at least three of the national priority domains. This presents another opportunity for ambulatory care pharmacists to assist their organizations in meeting these requirements.

Also relevant to ambulatory care pharmacists is the CMS hospital readmissions reduction program, which reduces payments to hospitals with excess readmissions.[49] Ambulatory care pharmacists who have a relationship with a hospital will have many opportunities to help the institution ensure that discharged patients experience good outcomes and do not trigger payment reductions.[50,51]

If your organization is considering or currently participating in the Medicare Shared Savings Program as an ACO, it must report performance on 33 CMS-required quality measures. Ambulatory care pharmacy services can assist the ACO in achieving 23 of the 33 measures. The impact of ambulatory care pharmacy services on these measures is a strong rationale for integrating pharmacists into the ACO model of care.

**Professional organizations and collaboratives**. Professional associations and a number of independent organizations are active in the quality arena. The Institute for HealthCare Improvement (IHI) and the Patient-Centered Primary Care Collaborative (PCPCC) are independent nonprofit organizations whose mission is to innovate, educate, and advocate for an effective and efficient health care system. The Web sites for both groups have numerous educational materials to assist practitioners in starting or enhancing their quality improvement programs, especially in the new care models. The American Medical Association formed the Physician Consortium for Performance Improvement (PCPI) 10 years ago for education,

advocacy, and measure development. PCPI has developed more than 300 measures focused on disease states and clinical services that compose 50% of the PQRS and "meaningful use" measure sets.

ASHP has recognized the growing importance of health-system pharmacists in quality initiatives in health care. A Quality Improvement Resource Center is maintained on the ASHP Web site with important resources and links. A Quality Advocates group formed in 2012 is charged with identifying priority core quality measures for institutional and ambulatory care pharmacists and to assist the organization in appointments to and membership in the various quality organizations.

The ASHP Pharmacy-Sensitive Accountability Measures Workgroup is charged with identifying a set of quality and accountability measures. Among the workgroup's goals are to establish pharmacists' accountability for patient outcomes and demonstrate the value of pharmacy services and best practices that optimize medication use; improve outcomes; and reduce hospital-acquired conditions, adverse drug events, and readmissions. High-leverage domains have been identified, and the initial set of quality measures is currently being finalized.

**Contributions of the ambulatory care pharmacist**

With any big problem come big opportunities, and the opportunities are tremendous for ambulatory care pharmacists to improve the safety and quality of medication use and the outcomes of patients. As previously stated, gaps in quality are occurring daily in our practices, and patients are experiencing unacceptable medication-related problems. Pressures are increasing on health systems, hospitals, physician groups, payers, and pharmacists to improve the quality of care. Payment changes and financial incentives are stimulating quality improvement in all health care organizations. It is vital for ambulatory care pharmacists to understand this environment

because many measures of health care quality are related to their work (see Table 4 below).

Continuing to carve out an essential role in improving the quality of medication use is imperative for gaining payment for ambulatory care pharmacist services. As pharmacists integrate into the new models of ambulatory care, they must be well informed about current and emerging performance measures required for payment, accreditation, or certification. Understanding the focus and role of the specific quality improvement groups affecting your organization will help you demonstrate the value of ambulatory care pharmacist services to patients, the parent or collaborating organization, and the overall health care enterprise.

**Conclusion**

In preparing this paper, the fact that the United States has made minimal progress in improving the quality of health care has weighed heavily on my mind. Although uncoordinated, significant resources have been devoted toward quality improvement, mostly at a high conceptual level. In practice, most clinicians are trying to provide the best services they can to their patients. Yet rarely are individual practitioners overtly addressing quality improvement in

Table 4.
**Examples of How Ambulatory Care Pharmacists Can Improve the Quality of Health Care**

| **Domain of Quality** | **Areas of Ambulatory Care Pharmacist Contributions** |
|---|---|
| Safety | Adverse drug event<br>Transitions of care |
| Effectiveness | Medication adherence<br>Rehospitalization rates |
| Patient-centeredness | Patient knowledge of medication self-management<br>Useful medication list |
| Timeliness | Immunizations<br>Appropriate monitoring |
| Efficiency | Rehospitalization rates<br>ER and hospital visits |
| Equity | Disparities in medication access |

their daily work. Why has all the national attention on health care quality not filtered down to the patient care level?

This situation reminds me of medical error. The problem must be fixed from the bottom up, not the top down. Just like error, quality occurs primarily at the patient–provider interface. As with patient safety, systems need to place practitioners in environments where it is hard not to provide quality services and where they are empowered to fix lapses in quality. For that reason, implementing the PDSA cycle as a method of quality improvement makes sense, because it allows for quick, albeit small, practice changes where individual practitioners fix any quality gap they encounter. The role of managers and organizational leaders in this scenario is to coordinate and consolidate many small practitioner-initiated changes into measurable quality improvement for the organization as a whole.

As pharmacists pursue a better practice model in ambulatory care, it is the perfect time to find ways to incorporate quality improvement into everyday practice. Imagine the progress that could be made if every ambulatory care pharmacist focused on quality improvement for one hour a day or one afternoon a week. With payment incentives now aligned with quality, there is a business case for this element of a pharmacy practice model, which has immense potential for improving the overall quality of patient care.

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