Developing a strategic plan for quality in pharmacy practice

RITA SHANE AND WILLIAM A. GOUVEIA
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Of the many transformations resulting from managed care, the current emphasis on understanding and measuring the quality of health care is among the most compelling and challenging. The Institute of Medicine (IOM) defines quality of care 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." The problem with this definition is that longitudinal information is often not available to evaluate the outcomes associated with the health care that was provided. As a result, many of the efforts to measure quality being expended by such organizations as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the National Committee for Quality Assurance (NCQA) are in fact directed at the measurement of processes or structures of health care that presum-ably are linked to desired outcomes. For example, NCQA’s Health Plan Employer Data and Information Set (HEDIS) measures key processes, such as immunizations, prenatal care, and screening for breast cancer, that have been demonstrated to result in favorable outcomes. The current efforts to measure quality in health care are laudable; however, the provision of quality care does not always ensure positive outcomes, and positive outcomes may occur when the quality of care is not optimal. For example, patients with acute myocardial infarction who are candidates for, but do not receive, a thrombolytic agent may not always have poor outcomes. Similarly, patients who do receive thrombolytic therapy may not always have positive outcomes, especially if they have significant comorbidities. Indicators of quality are often difficult to measure because the time course between the performance of a specific intervention or process and the resulting outcome may be quite long, as exempli-fied by using medications to manage hyperlipidemia and evaluating the presence of coronary artery disease. The IOM’s National Roundtable on Health Care Quality recently published the conclusions of its two years of deliberations on quality. The group concluded that a “national focus on improving the quality of health care is imperative” and that, while quality measurement in many areas of health care has not yet been developed, an inventory of “useful measures continues to grow.” Of particular interest is the continuing evidence in the literature linking medication use to both positive and negative patient outcomes. Additionally, a number of organizations, including NCQA, JCAHO, and the Health Care Financing Administration (HCFA), are establishing medication-specific indicators as measures of quality. Current efforts to define quality within the pharmacy profession include the Academy of Managed Care Pharmacy’s “Catalog of Pharmacy Quality Indicators” and work by the Coalition for Quality in Medication Use. The former is a guide to performance measures for managed care organizations. The Coalition for Quality in Medication Use was established by HCFA in conjunction with a number of pharmacy organizations (including the American Society of Health-System Pharmacists) to determine indicators for medication therapy through a two-year project, the Study of Clinically Relevant Indicators for Pharmacologic Therapy.
(SCRIPT). The goal is to develop core performance measures for medication use in order to reduce drug-related morbidity and mortality in the ambulatory care setting.

Quality-related problems. Mark Chassin, chairman of the IOM’s National Roundtable on Health Care Quality, defined three types of problems related to the quality of health care: underuse, overuse, and misuse. Underuse was defined as “failure to provide a service or treatment whose benefit is greater than its risk.” Overuse is when the risk of the treatment provided exceeds its benefit, and misuse is when the treatment or service results in a preventable complication that reduces the benefit. These three types of problems can serve as the basis of a strategic plan for quality in pharmacy practice, since drug-related problems occur in each category. For example, the problem of underuse can be resolved by maximizing the use of “good drugs,” such as β-blockers after myocardial infarction, and by improving compliance. Overuse can be prevented by minimizing the use of “bad drugs,” such as meperidine (especially in elderly patients). The problem of misuse can be addressed by preventing adverse drug events (ADEs). Quality in pharmacy practice can be demonstrated by taking responsibility for resolving these three types of problems.

Underuse and poor compliance. The literature continues to provide evidence of medications that are associated with positive patient outcomes but that are often underused. Recent examples are inhaled corticosteroids (in asthma patients taking β-blockers),7 angiotensin-converting enzyme inhibitors (maximum dosages in patients with congestive heart failure),8 spironolactone (in patients with congestive heart failure),9 β-blockers (after myocardial infarction),10 warfarin (in patients greater than 65 years of age with atrial fibrillation),11 and pain medications (around-the-clock administration, particularly in postoperative and cancer patients).12,13 These examples represent opportunities for pharmacists to demonstrate their role in the provision of quality by optimizing the use of “good drugs.” In developing a strategic plan for quality, one could evaluate the current medication regimens for patients with a given disease or condition and take responsibility for ensuring that the “good drugs” are appropriately prescribed. As new evidence supporting the need for specific medications to treat acute and chronic diseases and conditions becomes available, these medications can be incorporated into the care plan.

Poor compliance with medication regimens represents another form of underuse and is well documented:

- Reviews of the literature indicate that 25–75% of patients are noncompliant with their medications.14
- Noncompliance has been linked to 125,000 deaths in patients with cardiovascular disease, 20 million lost workdays, and an estimated cost of $13 billion to $15 billion due to noncompliance (based on data published in 1993).15
- A 1990 study of admissions of elderly patients to the hospital found that 11.3% of the admissions were attributable to noncompliance.16
- A meta-analysis of seven studies found that 5.5% of all hospital admissions were due to noncompliance, which was estimated to cost $8.5 billion in 1986.14

A number of interventions have been undertaken to improve compliance, and a recent meta-analysis of studies of these efforts revealed that a combination of interventions appears to be more effective than any single intervention.17 For example, patient education and follow-up telephone calls would be more effective than either action alone. A study of ambulatory care patients receiving antimicrobials produced similar findings; compliance was significantly higher among patients who received instructions and follow-up telephone calls from the pharmacist than among patients who did not receive these interventions.14

At Cedars-Sinai Medical Center, a study of prescriptions not picked up was conducted to determine the reasons and to reinforce the need for compliance.18 A pharmacist made two attempts to contact each patient. When the pharmacist spoke directly with the patient the number of prescriptions subsequently picked up was significantly higher than when the pharmacist left a message on an answering machine (p < 0.05). Other interventions that have been successful include special packaging, counseling, and calendars. Assuming responsibility for improving compliance is another strategy for resolving the underuse problem.

Overuse. Overuse of medications occurs throughout the health care system. Examples of overuse include prescribing of medications associated with toxicity in the elderly, polypharmacy, and excessive antimicrobial prescribing. According to a recent report by the Alliance for Aging Research, approximately 20% of older patients are given medications that are considered unsuitable because of the risk of toxicity.19 The panel responsible for the report provided a number of recommendations for reducing overuse, including (1) mandating that a list of drugs potentially inappropriate for older patients be used as a screening tool whenever these patients receive prescriptions, (2) establishing a mechanism for data collection, monitoring, and analysis of medication-related problems by age group, and (3) encouraging that health care professionals develop competency in geriatric pharmacotherapy. Drugs that are associated with morbidity in the elderly are well documented; the list of these drugs can be readily adapted as a screening tool.20
Overuse of medications in the elderly is being evaluated as part of the "Fleetwood Project" by the American Society of Consultant Pharmacists Research and Education Foundation. The Fleetwood Project is designed to determine costs and outcomes associated with medication-related problems in the elderly and seeks to develop and apply a multidisciplinary pharmaceutical care model to help avoid negative outcomes. One phase of the project specifically targets high-risk patients for intervention on the basis of a list of risk factors for medication-related problems in elderly residents of nursing facilities. Once high-risk patients are identified, the pharmacist will be responsible for prospectively reviewing their therapies, intervening with the physician, assessing patients, and developing a pharmaceutical care plan that will be shared with the patient care team.

Polypharmacy is another example of overuse and occurs independent of the age of the patient, particularly in patients with multiple symptoms or disease states. Polypharmacy also occurs when patients are seeing several physicians. The increased availability of nonprescription medications contributes to the problem of overuse. The consequences of polypharmacy are well documented, as are opportunities to improve quality through patient education, "brown-bag" functions, and simplifying medication regimens.

The current problems associated with antimicrobial resistance represent another example of overuse. Some resistance to all antimicrobial drugs has been reported, and there are increasing reports of highly resistant "superbugs." Although a majority of the reports deal with antimicrobial resistance, antifungal resistance and multidrug-resistant tuberculosis have also been noted. Traditionally, pharmacists have focused their efforts on antimicrobial use review programs whose primary goal was to reduce expenses; however, the current problem of antimicrobial resistance demands a focus on organizational and community resistance patterns in order to curtail overuse. The pharmacist can play an important role as part of a multidisciplinary team by assisting with selection of the antimicrobial agent with the narrowest spectrum, using medications other than antimicrobials to treat symptoms when appropriate, evaluating the duration of antimicrobial therapy for appropriateness, and educating other health care professionals.

Medication misuse is a significant problem that occurs independently. Polypharmacy, polytherapy, and underuse are well-documented examples. Overuse is the term used to describe the use of medications in ways that produce avoidable complications or adverse events. In an analysis of 393 medication error claims conducted by the company Claims Management. Inc., $48 million in losses were responsible for 272 claims between 1976 and 1995 and represented 10% of all professional liability claims and 56% of all professional liability claims and 9.4% of all professional liability claims. An 8.48-fold increase in deaths among outpatients due to medication errors was reported for the period from 1983 to 1993.

A recent report found a 68% reduction in preventable ADEs when pharmacists participated in intensive-care unit rounds. Since the establishment of JCAHO's Sentinel Event Program, over 600 sentinel event have been reported, of which medication-related events have been the second most frequent. A recent report to Congress by the Medicare Payment Advisory Commission focused on the need to "consider opportunities for minimizing avoidable errors in health care through payment policies and quality improvement programs." The concern about preventable ADEs, coupled with the more rapid approval of medications by FDA, has created national concern about medication safety. Never have medications been so widely respected for their ability both to improve illness and to cause harm. The current environment provides pharmacists with the opportunity to assume a leadership role in ensuring the safety of the medication-use process. In developing a strategic plan for quality, it is incumbent on pharmacists to take responsibility for analyzing the key elements of the medication-use process—prescribing, dispensing, administration, monitoring—in their own organizations in order to determine systems that may contribute to misuse.

Developing a list of problems and a strategic plan. In formulating a strategic plan for quality in one's own practice setting, selecting which quality-related problem to focus on de-
Table 1.
List of Potential Quality-Related Problems

<table>
<thead>
<tr>
<th>Underuse</th>
<th>Overuse</th>
<th>Misuse</th>
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<tbody>
<tr>
<td>Spironolactone for congestive heart failure</td>
<td>Meperidine in elderly patients</td>
<td>Cisapride in presence of interacting drugs</td>
</tr>
<tr>
<td>Medications for cancer pain</td>
<td>Vancomycin</td>
<td>Cyclooxygenase 2 inhibitors and warfarin</td>
</tr>
<tr>
<td>Estrogens in women older than 65 yr</td>
<td>Antimicrobials for otitis media</td>
<td>when effect on INR is undesirable</td>
</tr>
<tr>
<td>(duration of use)</td>
<td>(duration of use)</td>
<td>Neuromuscular blocking agents in intensive care patients</td>
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*INR = International Normalized Ratio.*

Depends on several factors. These include the structure and priorities of the organization, the demographics of the patients, quality-related problems that may already have been identified, and the resources available, including information systems that allow identification of patients at risk. The organization’s quality improvement department can help provide some of this information. Identifying and prioritizing current problems is the logical first step and is consistent with the JCAHO requirement to evaluate problem-prone processes as part of an organization’s performance improvement program.

We recommend that a list of potential problems associated with medication use be developed and continuously updated and prioritized as part of the strategic plan for quality (Table 1). Potential problems can be listed under the categories of underuse, overdose, and misuse. One can then choose to study a specific problem for a period of time, initiate an intervention, and measure the impact of the change to determine if the problem has been resolved. For example, one could begin a two-week evaluation of patients taking meperidine and flurazepam—medications considered inappropriate for the elderly—and telephone the physicians of these patients to suggest alternative therapies. One could then evaluate the prescribing practices of these physicians over the next two weeks and determine whether the intervention was successful in reducing the prescribing of these medications. If it was not, another change might be warranted, such as implementing a pharmacy and therapeutics committee protocol to restrict the use of these agents to patients under 65 years of age. Once the test of change is successful, one could select another problem for evaluation and intervention based on the needs and priorities of the organization.

Conclusion. Problems with overuse, underuse, and misuse of medications provide a useful foundation for developing a strategic plan for quality in pharmacy practice. As indicators of quality continue to be published and promulgated by regulatory agencies, pharmacists have the opportunity to take a leadership role in evaluating these indicators within their own organizations to demonstrate their contributions to quality. Simply stated, quality in pharmacy will be achieved by maximizing use of “good drugs,” minimizing use of “bad drugs,” and preventing ADEs whenever and wherever the patient accesses the health care system.

References
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23. Cohen FL, Tartasky D. Microbial resistance...