
Developing Performance Measures for Prescription Drug Management

Anita J. Chawla, Ph.D., Marjorie R. Hatzmann, M.B.A., and Stacey R. Long, M.S.

Prescription drug management plans are outpatient drug benefit programs that strive to manage the cost effective and clinically appropriate delivery of prescription drugs to beneficiaries. The demand for accountability and a means to evaluate performance of drug benefit management programs is growing; nevertheless, a set of valid, standardized indicators for evaluating performance does not exist. We review drug management program activities and identify available measures for assessing performance. Additionally, we note recent efforts to develop performance indicators for prescription drug management. We conclude by raising key questions that should be addressed before a comprehensive set of performance measures can be implemented.

INTRODUCTION

Prescription drug management plans are outpatient drug benefit programs that strive to manage the cost effective and clinically appropriate delivery of prescription drugs to beneficiaries through a range of services. These services are provided on behalf of managed care organizations (MCOs), employers, third-party payers and may encompass a variety of activities.

Anita J. Chawla is with Genentech, Inc. Marjorie R. Hatzmann and Stacy R. Long are with the MEDSTAT Group, Inc. Research for this article was supported by the Health Care Financing Administration (HCFA) under Contract 500-95-0057-TO#9 with the Barents Group of KPMG Consulting, Inc., in Number affiliation with Harvard Medical School, the MEDSTAT Group, and Westat. The views expressed in this article are those of the authors and do not necessarily reflect those of the Barents Group of KPMG Consulting, Inc., Harvard Medical School, the MEDSTAT Group, Westat, or HCFA.

They may be delivered by a distinct organization such as a pharmacy benefit management company (PBM), a unit within an MCO or an integrated delivery system.

The demand for accountability and a means to evaluate performance of drug benefit management programs is growing. Nevertheless, a set of valid, standardized indicators for evaluating prescription drug management does not currently exist (Lipton et al., 1999). In its assessment of health maintenance organization (HMO) relationships and experiences with PBMs, the Office of the Inspector General (OIG) concluded that more oversight of PBM performance is warranted. It recommended that HCFA and State Medicaid agencies pursue actions to ensure that their HMOs are accountable for the quality of PBM services delivered to beneficiaries (U.S. Office of the Inspector General, 1997). OIG also recommended that Federal agencies, with other public and private organizations, pursue efforts to support the development of standards and measures for evaluating the quality of care for pharmacy services in the context of managed care. Suggestions about strategies for making PBMs more accountable to employers have also been put forth (Schulman et al., 1996).

This article reviews the functions of prescription drug management programs and discusses currently available performance measures that may be used to assess drug management activities. Issues related to reporting requirement implementation are also raised. We also note recent efforts to develop valid, standardized indicators for

evaluating drug management programs. We conclude by asking three key questions that must be addressed before a comprehensive set of performance measures for prescription drug management programs is fully implemented.

WHY MEASURE PERFORMANCE?

Over the last decade, prescription drug spending has generally received considerable scrutiny due to its growth rate and share of national health expenditures (Levit et al., 2000). Growth rates increased from 8.7 percent in 1993 to 15.4 percent in 1998. Spending for prescription drugs increased from 6 percent of health spending in 1994 to 8 percent in 1998. Moreover, prescription drug spending represented a 20-percent share of the increase in health spending in 1998. The desire to understand the impact of prescription drug management on prescribing behavior, drug utilization, and spending has grown commensurately.

PBMs and entities that provide drug management services have become key organizations in the provision of prescription drugs. A recent survey of HMOs revealed that 600 of 604 HMOs had a drug benefit; only 57 HMOs of the 600 with a drug benefit did not provide prescription drug coverage through a PBM (Pharmacy Benefit Management Institute, Inc., 2000). Based on these figures, the Pharmacy Benefit Management Institute has estimated PBM coverage to be approximately 160-190 million individuals in the U.S. (Pharmacy Benefit Management Institute Inc., 2000).

The large percentage of HMOs delegating the management of their prescription drug services to outside entities has increased interest in holding those organizations accountable. To date, most HMOs have focused efforts on measuring the net financial benefit of delegating this activity. However, interest in measuring the quality of the ser-

vices provided has increased. Concern about pharmaceutical company ownership of prescription drug management companies and strategic alliances and partnerships with them has also contributed to interest in PBM activities (U.S. General Accounting Office, 1995). In its study of HMOs and PBMs, the OIG found that HMOs cited the potential impact of PBM alliances with drug manufacturers to be an important issue (U.S. Office of the Inspector General, 1997). OIG noted four areas in which PBM behavior could be affected: (1) formularies, (2) drug use review programs, (3) educational interventions, and (4) cost-effectiveness research. With the sale of Diversified Pharmaceutical Services by SmithKline Beecham and PCS Health Systems by Eli Lilly and Company within the last 5 years, Merck-Medco is the only PBM owned by a pharmaceutical company. Nevertheless, strategic alliances and partnerships remain.

The scope of prescription drug management activities may range from administrative and management functions (e.g., claims processing and adjudication, pharmacy network management) to clinical activities (e.g., formulary development and management) and cost containment functions (e.g., rebate negotiation and contracting with pharmaceutical manufacturers) (Kreling et al., 1996). This broad array of activities may encompass complex financial incentives and include control over drug utilization; consequently, there is interest in understanding the impact of drug management systems on quality of care as well on prescription drug expenditures.

The role that PBMs play in managing drug benefits may grow if the Medicare program is expanded to include outpatient prescription drug benefits. Several proposals for Medicare drug benefits advocate adopting private-sector strategies where PBMs administer outpatient prescription drug coverage (McClellan, Spatz, and

Table 1
Prescription Drug Management Activities

<p>Administrative and Management Establishment of Benefit Design and Structure Maintenance of Retail Pharmacy Provider Network Claims Processing and Adjudication Record Keeping and Program Reporting Mail and Online Services</p>	<p>Cost Containment Rebates Discounts</p>
<p>Drug Use Control Formulary Development and Management Interchange Programs Drug Utilization Review</p>	<p>Disease Management Physician and Member Education Outcomes Research</p>

SOURCE: The MEDSTAT Group, Washington, DC, 2001.

Carney, 2000; Huskamp et al., 2000; Etheredge, 1999). A recent evaluation of the potential contribution of PBMs in extending Medicare benefits to outpatient prescription drugs identified advantages, limitations, and operational challenges (Cook, Kornfield, and Gold, 2000). The five sets of operational issues that would need to be addressed include: (1) the use of formularies, (2) the competitive bidding process, (3) access to discounted prices, (4) beneficiary cost sharing, and (5) education. Performance measurement data for drug benefit programs would support informed decisionmaking in these areas. Another recent study looked at drug use management strategies in four large Medicare HMOs to assess the potential impact of prescription drug management plans for the Medicare program (Lipton et al., 2000). This study also highlighted several areas related to drug management activities that require further investigation.

PRESCRIPTION DRUG MANAGEMENT PROGRAMS

The structure and contractual relationships of prescription drug management programs have been well documented (Lipton et al., 1999). Lipton and colleagues describe a continuum of contractual relationships that ranges from a “carved-in” program to a “carved-out” program. In the carved-in arrangement, prescription drug

management programs reside within a larger organization, and there is no contractual relationship with a separate organization. An intermediate arrangement has been characterized as a subcontractual or partnership relationship. In this type of structure, some drug management activities may be performed by the health plan or all drug management activities are performed for a health plan by a PBM through a subcontract. A carved-out relationship represents a true contractual relationship in which a purchaser, such as an employer, contracts separately with a PBM to manage its prescription drug benefit.

The activities in which prescription drug management programs may engage have been described and classified in a number of different ways, including evolution in service mix (Schulman et al., 1996), the degree of impact on patient care (U.S. Office of the Inspector General, 1997), and the functional similarity of activities (Kreling et al., 1996; Lipton et al., 1999). Our framework for discussing performance measurement for prescription drug management programs builds on these classification schemes, and we suggest that four major categories of drug benefit management activities should be considered, as illustrated in Table 1: (1) administrative and management, (2) drug use control, (3) cost containment, and (4) disease management. These functions are described in further detail in the following section.

Table 2
Administration and Management Measures

Administration	Management
Average time required to process a claim	PBM/drug management program report; claims monitoring report
Claims processing accuracy percentage	PBM/drug management program report; claims audit report
Number of claims processing related complaints	PBM/drug management program report; member complaint data
Customer request response times	PBM/drug management program report
Percentage of pharmacies (in county) in network	PBM/drug management program report
Total number of prescriptions	PBM/drug management program claims
Average number of prescriptions per member per year	PBM/drug management program claims

NOTE: PBM is pharmacy benefit management.

SOURCE: The MEDSTAT Group, Washington, DC, 2001.

AVAILABLE MEASURES AND CHALLENGES FOR IMPLEMENTATION

Current tools for monitoring and improving prescription drug use are fragmented and not standardized. The literature indicates that the selection of measures reported is discretionary and varies across organizations. Consequently, MCOs and purchasers often have incomplete information to assess the value of prescription drug management programs.

In the following sections, we suggest a basic framework for conducting performance measurement activities using available measures. For each of four major categories of activities, we review existing pharmaceutical care performance measures, describe the data required to calculate them, and describe any feasibility issues associated with that calculation.

Performance Measurement Using Currently Available Measures

Administrative and Management Activities

Indicators to measure administrative and management activities can be organized into the following subcategories: claims processing, pharmacy network management, and utilization management.

Claims processing is a core function

drug management programs offer to MCOs and purchasers, and therefore its effectiveness should be measured. As indicated in Table 2 such measures are similar to those commonly used to evaluate the administrative functions of MCOs. A measurement set should include the average time required to process claims, along with claims “aging” measures, such as the number of backlogged claims and a distribution measurement of the length of the backlog. In addition, overall claims processing accuracy percentages should be evaluated. The data for these measures can be obtained by requiring the PBM or drug management program to report the measures or through an independent audit of the claims processing function conducted by the MCO, purchaser, or a third party. The number of complaints associated with claims processing also can be evaluated to assess trends in payment accuracy or timeliness.

An MCO or purchaser typically will assess whether an adequate network of pharmacies has been developed. Network adequacy is reflected in beneficiary access, which may be measured by the percentage of pharmacies in a certain region, pharmacy provider turnover, and average time required to process a prescription. In assessing average time required to process a prescription, mail order and retail pharmacy services should be considered separately. Averaging the processing time for the two delivery meth-

Table 3
Drug Use Control Measures

Measure	Data Sources and Comments
Frequency of formulary updates DUR savings, per member per year	PBM/drug management program report PBM/drug management program report (return on investment measure), prescription drug claims, and DUR costs
Generic fill rate Dispensed as written fill rate	Prescription drug claims Prescription drug claims, pharmacy management information systems
Pharmacy/PBM formulary compliance Physician formulary compliance	Prescription drug claims, formulary information Prescription drug claims linked with provider data; formulary

NOTES: PBM is pharmacy benefit management. DUR is drug utilization review.

SOURCE: The MEDSTAT Group, Washington, DC, 2001.

ods would not produce meaningful results because retail delivery has a much shorter turnaround time. As with claims processing, purchasers and MCOs can require PBMs to report on these functions. The access measures also may be evaluated using the PBM pharmacy directory and comparing it with membership demographic information. Patient satisfaction with the pharmacy network may be measured through a satisfaction survey, too.

The most widely used standard measure of prescription drug utilization is the outpatient drug utilization measure included in the Health Plan Employer Data and Information Set (HEDIS®) maintained by the National Committee for Quality Assurance (NCQA) (National Committee for Quality Assurance, 2000b). This measure includes several components, including the total number of prescriptions and the average number of prescriptions per member per year, stratified by age group. The utility of this measure, particularly for comparisons across populations, is limited by the lack of risk adjustment for population differences in sex and health status. An additional measure of utilization, which is not included in the outpatient drug utilization measure, is average days supply dispensed. When implementing this measure, mail-order prescriptions (where the quantity is frequently large) and retail-filled prescriptions must be distinguished. A more comprehensive review of utilization can be

obtained by looking at the distribution of claims across therapeutic class, within therapeutic groups, and by investigating the utilization and cost drivers of expenditure growth (Dubois et al., 2000). Comprehensive approaches to measuring utilization require linking pharmacy claims with medical claims.

Drug Use Control Activities

Drug use control covers a number of drug management functions, including formulary management, drug mix and interchange programs, and drug utilization review processes. Measures that can be used to assess these activities are summarized in Table 3. A large component of prescription drug management activities are centered on developing and managing the formulary. Although employers and MCOs determine how restrictive the formulary is (open, preferred, or closed), the Pharmacy and Therapeutics Committee of the PBM or MCO determines the actual drugs that are included on the list. Both the frequency with which the formulary is reviewed and updated, and the structure of the Pharmacy and Therapeutics Committee are items that MCOs must monitor for NCQA accreditation (National Committee for Quality Assurance, 2000a).

Drug management programs, in addition to purchasers, are interested in measuring physician and pharmacy compliance with

Table 4
Cost Containment Measures

Measure	Data Sources and Comments
Total cost of prescriptions (HEDIS®)	Pharmacy claims
Average cost of prescriptions, per member per month (HEDIS®)	Pharmacy claims
AWP versus cost of high-use drugs	Pharmacy claims
Average rebate per claim	PBM/drug management program report; pharmacy claims
Rebates as percentage of total drug spending	PBM/drug management program report; pharmacy claims
Manufacturer and pharmacy discounts as percentage of total drug costs	PBM/drug management program report; pharmacy claims
Total savings through PBM management	PBM/drug management program report; pharmacy claims

NOTES: HEDIS® is Health Plan Employer Data and Information Set. AWP is average wholesale price. PBM is pharmacy benefit management.

SOURCE: The MEDSTAT Group, Washington, DC, 2001.

the formulary. Compliance can be evaluated by comparing the prescriptions actually dispensed with those recommended by the formulary. Interchange programs and substitution programs are integral strategies to increase formulary compliance and shift market share to preferred or rebate products. Existing measures that assess the impact of interchange programs include the generic fill rate and percentage of prescriptions that are dispensed as written. Purchasers and MCOs may evaluate these rates for the drug management program or PBM, for pharmacies in the network, and individual physicians. Physician prescribing patterns may also be reviewed if pharmacy claims are linked with provider information and medical claims.

Cost Containment

Monitoring the costs and savings of drug management programs has been the main focus of performance measurement to date. Cost containment is the activity with the largest number of currently available performance measures, although there are not any published standards on how drug management programs should calculate and report these measures to purchasers. The absence of standardized methods for such calculations makes it difficult to compare the relative effectiveness

of drug management programs. Measures that may be used to assess cost containment are presented in Table 4.

There are standard specifications for calculating total cost of prescriptions and average cost of prescriptions per member, per year in the HEDIS® measure for outpatient drug utilization. These measures are calculated using pharmacy claims and enrollment data. Both measures would provide a clearer picture of cost issues if evaluated separately by therapeutic class.

Information on rebates and discounts provides detail on the savings associated with a PBM that negotiates arrangements with pharmaceutical manufacturers. However, detailed data on rebates and discounts can be difficult to obtain because PBMs generally consider the data to be proprietary.

While drug utilization review (DUR) occurs both prospectively and retrospectively on an ongoing basis at MCOs and PBMs, there are few performance measures available to quantify the impact of DUR programs. The most commonly used measure is DUR savings per member per month or per claim. When evaluating DUR activity, the costs of the administration of the DUR program should be included in any cost-benefit calculation. In some cases, complete cost information may not be provided when a drug management program submits reports on DUR activity.

Table 5
Disease Management Measures

Measure	Data Sources and Comments
Effectiveness of care indicators (HEDIS®)	Drug claims linked with medical claims and enrollment data
Patient medication adherence (treatment guidelines)	Drug claims linked with medical claims and enrollment data
Physician prescribing patterns	Drug claims linked with medical claims and enrollment data
ADEs/ADRs per 1,000	Drug claims linked with medical claims and enrollment data
Reduction in utilization or costs from disease management program	Drug claims linked with medical claims, disease management program participation; requires evaluation methodology to draw causal inferences
Cost offset and cost-effectiveness findings	Drug claims linked with medical claims; requires sophisticated methodological approach to draw causal inferences

NOTES: HEDIS® is Health Plan Employer Data and Information Set. ADEs/ADRs is adverse drug events/adverse drug reactions.

SOURCE: The MEDSTAT Group, Washington, DC, 2001.

Disease Management

Disease management programs have been created as drug management programs have found that patients with certain chronic conditions may benefit from further intervention. Disease management programs have a clinical focus; consequently, we consider them separately from drug use control activities. To measure the impact of disease management interventions, it is necessary to link the information contained in patient medical claims and encounters with pharmacy claims and encounters. Further work is needed in developing measures that better assess outcomes of care rather than process of care. True outcome measures address success and failure rates for therapy and the avoidance of certain health events, such as emergency room admissions and clinical complications (e.g., amputations in diabetics, infections after surgery). Measures that are useful in assessing disease management activities are summarized in Table 5.

Combining medical claims data with information obtained from DUR assessments can provide valuable information on the impact of disease management programs and education efforts. Another measurement that should be considered is the outcome associated with the underuse of drugs that have been identified as high-

ly effective for persons with certain conditions. Education related measures, such as patient medication adherence and physician prescribing compliance for conditions in which under utilization of pharmaceutical care is often an issue (i.e., asthma, depression, cholesterol management), can be measured by linking pharmacy and medical claims. In addition, adverse drug events per thousand patients provide a measurement of prescription drug interaction monitoring activities.

Findings from outcomes research studies on cost offset and cost effectiveness can be used to evaluate pharmaceutical treatments embodied in disease management activities (Grabowski and Mullins, 1997). Findings from these types of studies are also used in making formulary decisions (Grabowski and Mullins, 1997; Luce, Lyles, and Rentz, 1996). These types of studies may include cost-offset and cost-effectiveness studies, cost-benefit, cost-utility and cost of illness analysis.

The measures in the Effectiveness of Care domain of HEDIS® focus on the clinical quality of care delivered by an MCO. These measures assess levels of preventive care (i.e., breast and cervical cancer screenings and vaccinations), treatments for those with acute episodes of illness, and care for those with chronic disease. Three HEDIS® 2001 measures in the Effectiveness of Care domain specifically integrate medical

Table 6
Satisfaction Measures

Measure	Data Sources and Comments
Managed care organization/employer satisfaction with services	Survey
Member satisfaction with pharmacy benefit management services	Survey
Member satisfaction with pharmacy care and services	Survey

SOURCE: The MEDSTAT Group, Washington, DC, 2001.

event with pharmaceutical use information to assess quality of care for services often targeted for disease management programs. These measures are: beta blocker treatment after a heart attack, antidepressant medication management, and appropriate medications for people with asthma.

More work is needed in developing disease management performance measures. NCQA is in the process of developing a disease management certification program that would encompass services provided by stand-alone vendors, pharmaceutical companies, PBMs with disease management services, internet-based disease management companies, health plans, and other health providers (hospitals, medical groups, etc.). Expected to be operational by the end of 2001, the program will include modification of existing HEDIS® measures and the possible development of new ones for disease management programs.

Beneficiary Satisfaction

Similar to the Agency for Health Care Policy and Research's Consumer Assessment of Health Plan Study (CAHPS®) survey used for HEDIS®, a pharmacy benefits satisfaction survey could be implemented in a drug management program comprehensive measure set. A PBM satisfaction survey would measure how effectively an PBM performs its core functions of administration and management, drug use control, disease management, and cost containment. Many of the existing CAHPS® survey questions can be slightly modified to apply to PBM services, such as claims

processing, customer service, and receiving care quickly. A PBM satisfaction survey should not only include an overall rating of the PBM, but also an overall rating of the pharmaceutical provider network. The PBM Institute has developed a customer satisfaction survey for the PBM industry that asks employers and MCOs to rate the services of their PBMs on a scale from 1 to 10. This could be used as a component of a satisfaction measurement. Building on information contained in the Response Oriented Patient Evaluation Survey tool (Silverman and Rosen, 1999), pharmacy specific measures should also be included in the satisfaction survey. Appropriate questions could include (1) patient's access to pharmacies in the PBM network, (2) their satisfaction with the pharmacy's ability to fill their prescriptions appropriately, (3) whether the pharmacist has provided appropriate counseling and advice, and (4) whether the price of the prescribed medication was competitive. Additionally, questions on satisfaction with pharmaceutical care from the Foundation for Accountability's (FACCT) Annual Patient Satisfaction Survey could be incorporated. Potential satisfaction measures are summarized in Table 6.

Technical Challenges in Performance Measurement

Technical challenges in performance measurement include data timeliness, data accuracy, data completeness, and database linkage issues. Before a comprehensive measurement tool for prescription drug

management systems can be developed these factors must be considered. The timely availability of the required data elements for any individual measure can influence whether that measure is included in a purchaser's or MCO's measurement set. Furthermore, the measurement focus of purchasers and MCOs can be greatly influenced by an organization's contractual relationship with a PBM. Because organizations frequently delegate data processing and claims payment directly to a PBM, the timeliness of data provided may be determined by that contract or by the PBM.

Timeliness can also be influenced by whether a prescription drug management system collects data at the point of service delivery. Data collection at the point of delivery facilitates access to data on a real-time basis with no need to wait for the submission of a paper claim form. Organizations which receive most of their information on paper claims will have a longer time lag and consequently may not be able to supply updated data promptly. Additional issues of timeliness occur when pharmacy claims must be linked with medical claims to produce a measure, and the submission and processing of the medical claims contributes to delays in accessing required information.

It is critical to evaluate data accuracy and determine data issues affecting particular measures. Data collected electronically at the point of sale is less prone to error. This data is captured only once, does not need to be rekeyed, and is entered by the original provider of service, increasing its chances of accuracy. Data submitted via paper claims is documented by the provider of service but then must be entered into the MCO's data processing system by hand, possibly resulting in errors. Common data errors for both types of data include incorrect patient iden-

tification, incorrect prescriber identification, incorrect date of service, and invalid or incorrect drug code. To screen out these errors, prescription drug management systems should be using edit checks prior to accepting a claim for processing.

Data completeness is affected by the contracting arrangement between a prescription drug management plan and an MCO. Which data elements collected and retained during processing and payment often are determined by the PBM, rather than the MCO or purchaser. In some cases, the PBM may not be capturing all of the data elements needed to conduct performance measurement. The ability to specify which data elements are retained and provided for analysis and measurement is a key issue for contracting arrangements with a prescription drug management plan. MCOs and purchasers who realize that they need additional data elements often discover that they cannot request them until it is time to recontract, which could be a year later. Additionally, not all prescription drugs used by plan members may not be captured in the pharmaceutical benefit data system. For example, physicians often provide medication samples to their patients that are not captured in data systems and some patients may opt to pay for their pharmaceuticals out of pocket, rendering the prescription drug history incomplete.

A number of key fields that a purchaser or MCO might want for performance measurement are not standard fields included in the typical prescription drug management system database. They would need to be obtained from claims and encounter data, another source of administrative data, or medical records. These data elements include patient diagnosis information, place of service, and information linking the particular prescription to a hospital stay or surgical procedure. MCOs and pur-

chasers often treat the PBM data as a separate database; therefore, organizations conducting performance measurement face a technical challenge in merging files to obtain a complete picture of experience for a particular patient. Challenges include file format compatibility, a common patient identifier used for linking, the potential for duplicate records, the consistency of other data elements, and efficiently handling extremely large files containing pharmacy data. The availability of this information greatly influences the MCO's or purchaser's ability to conduct comprehensive performance measurement of all PBM functions.

PERFORMANCE MEASUREMENT DEVELOPMENT EFFORTS

A variety of entities have sponsored the development of measures to evaluate pharmaceutical care. To date, however, no one entity has defined a comprehensive set of pharmaceutical performance measures that meet the quality of care, financial, outcomes, and satisfaction information needs of purchasing groups (MCOs, governments, employers, and other purchasers), policymakers, and consumers. In this section, we review performance measurement development efforts by various organizations.

Healthcare Quality Organizations

In recent years, groups such as the NCQA and the Joint Commission on the Accreditation of Health Care Organizations (JCAHO) have challenged health and MCOs to use data from their pharmacy benefit programs to measure the quality and the outcome of care being provided. In the late 1990s, NCQA developed HEDIS® as a standardized mechanism for MCOs to report performance measures to

purchaser organizations and consumers. HEDIS® measures are reported on an annual basis by MCOs. HEDIS® is the most widely used set of performance measures in the managed care industry and has become a model for emerging systems of performance measurement in other areas of health care delivery (National Committee for Quality Assurance, 1999).

Early versions of HEDIS® did not focus on the use of medication or pharmacy services. While there are still no pharmacy or PBM-specific indicators for HEDIS®, there now are measures that assess the use of medication for specific patient populations as well as measures that quantify outpatient drug utilization at an MCO level. Additionally, the introduction of a disease management certification program by NCQA may result in the development of performance measures for services provided by pharmaceutical benefit management programs.

As part of its accrediting activities, in the late 1990s, JCAHO initiated ORYX™, a performance reporting initiative for health care organizations. ORYX™ measures are developed by external organizations and certified by JCAHO for use by health care organizations seeking accreditation. As of April 2001, JCAHO's Web site listed more than 200 measurement systems available from which health care entities may select ORYX™ measures (Joint Commission on the Accreditation of Health Care Organizations, 2001). The total number of measures for which organizations currently are required to collect and report data to JCAHO has been capped at six. There are several ORYX™ measures that assess medication usage during inpatient and outpatient surgical procedures (e.g., anesthesia), drug use monitoring, and extent of adverse drug reactions. The majority of these measures relate to pharmacy services provided by hospitals, long-term care facilities, and ambulatory clinics.

A number of other organizations have addressed uniform pharmaceutical performance standards. FACCT, a coalition of consumer organizations and purchasers, was formed to measure health care quality and communicate results in a way that makes sense to consumers. FACCT has developed a series of quality measurement tools that are focused on outcomes for high-cost, high-prevalence diseases such as asthma, coronary artery disease, depression, breast cancer, diabetes mellitus, alcoholism, and smoking. FACCT's annual patient survey includes 27 questions on medication compliance. At this time, neither purchasing groups nor MCOs have implemented FACCT measures on a widespread basis.

Coalitions and Professional Associations

The Study of Clinically Relevant Indicators of Pharmacologic Therapy (SCRIPT) Project is the first major effort of the Coalition for Quality in Medication Use. The coalition is comprised of over 50 national, public, and private sector organizations and was formed in 1998. Funded by HCFA, the SCRIPT Project has proceeded in two phases. The first phase, managed by the JCAHO, consisted of the development of a method for selection of measures including a review of existing measures for validity and applicability. An evidence-based, consensus-driven process focused the effort on cardiovascular diseases, risk factors, and outcomes. The second phase, managed by MassPRO, is characterized by field-testing of measures related to medication prescribing and compliance, therapeutic monitoring, and documentation in heart failure, coronary artery disease, atrial fibrillation, hypertension,

diabetes, and hyperlipidemia. The project will produce a compendium of tested measures for use by the coalition members.

The National Pharmaceutical Council's (NPC), Quality Initiative Group (QIG) is a consortium of representatives from 25 of the United States' largest research-based pharmaceutical companies having clinical, epidemiological, outcomes research, statistical, and policy expertise. The purpose of the QIG is to provide high-level technical support for the industry to assess quality of care initiatives by external organizations. Among its recent efforts, NPC's QIG is serving as an Advisory Industry Council to the SCRIPT Steering Committee and is collaborating with NCQA to implement standards, measures, and policy to improve the quality of pharmaceutical care.

The American Pharmaceutical Association's Foundation Quality Center is funding three teams of researchers as part of its Pharmacy Service Quality: Research Initiative Grant Program. The grants support research projects that develop and test measures of quality of pharmacy services (American Pharmaceutical Association Foundation Quality Center, 1999). Current projects include the development of three new clinically significant quantitative indicators of community pharmacy performance: (1) apparent mistimed refills, (2) apparent therapeutic duplication, and (3) inappropriate length of therapy. Other pharmacy service QRI studies focus on measuring patient satisfaction with pharmacy services and documenting requirements for pharmacists to assess quality.

The American Society for Automation in Pharmacy has initiated a workgroup to establish the framework for a standard protocol to interface disease management systems with pharmacy management sys-

tems. The workgroup is also exploring the development of a standardized set of data elements that can serve to measure outcomes.

Facilitated by the Academy of Managed Care Pharmacy, the Pharmacy Quality Council is a cooperative effort of nine professional and trade organizations that has developed an inventory of performance indicators relevant to the pharmaceutical care industry. The inventory is called the Summary of National Pharmacy Quality Measures. (Pharmacy Quality Council, 1999). One of the council's objectives is to develop new measures for pharmacy quality and utilization that surpass the measures currently used throughout the Nation.

COMPREHENSIVE MEASUREMENT

With the evolution of managed care in response to demands for cost containment, purchasers of health benefits ultimately demanded accountability for the quality of care delivered. NCQA and HEDIS® measures emerged in response to those demands (Iglehart, 1996). Similarly, efforts to control costs while delivering prescription drugs appropriately in an environment of increased drug utilization and spending along with the availability of new medications to treat and prevent chronic illness will fuel demands for accountability of drug management programs. Recognizing that accountability is warranted, that drug benefit programs provide a broad array of services that may have a tremendous impact on patient outcomes, and that there is a need for better information to make decisions about the design, implementation, and management of these programs, three key issues emerge. First, given the continuum of contractual relationships for including drug benefit programs in the menu of health benefits that are offered to beneficiaries, what organization should be

accountable for the activities of a drug benefit program? Second, what should be the content of a comprehensive set of standardized performance measures for prescription drug management programs? Third, what organization or coalition will ultimately be vested with the responsibility of developing a comprehensive set of performance measures for drug benefit programs?

The question of where accountability should rest is complex because prescription drug management systems may be part of a larger organization or may be provided by a PBM through a contractual arrangement with a purchaser that is distinct from the main health plan contract. There might also be an arrangement between the two extremes of a carved-in and a carved-out program, where some of the prescription drug management activities are conducted by an MCO whereas others are subcontracted out to a PBM. An additional issue, closely related to the nature of the contractual arrangement for drug management systems, is the proprietary nature of much of the information associated with cost containment activities conducted on the part of PBMs. Establishment of the responsibility for reporting requirements will have implications for negotiations around the set of measures that must be reported and the need for sharing data.

A standardized, comprehensive set of performance indicators will enable public and private sector purchasing organizations to evaluate administrative and management functions, drug use control, cost containment, and disease management services provided, as well as the impact of these activities on quality of care and consumer satisfaction. A comprehensive set of measures also will enable these organizations to make informed purchasing and management decisions when selecting

from an array of services. Several groups have made significant progress in indicator development for a variety of activities; however, the results of these efforts have not yet led to a cohesive set of performance measures that address the broad array of services that prescription drug management programs provide. The breadth and the content of the performance measurement set will determine its utility for evaluation and decisionmaking. This comprehensive measurement set could be included within existing report cards that assess managed care plan performance or could stand alone as a separate reporting requirement.

Finally, no single entity has yet stepped forward to take on the responsibility of developing a comprehensive set of performance measurement standards for evaluating the efficiency and effectiveness of prescription drug management programs. Two possibilities emerge: (1) responsibility for such an initiative could be incorporated within the realm of an existing standards-setting organization and (2) a new body could be established. The best place for lodging that responsibility is a policy question that begs further investigation.

REFERENCES

- American Pharmaceutical Association Foundation Quality Center: *Pharmacy Service Quality: Research Initiative*. March, 1999. Internet address: <http://www.aphafoundation.org/research1.htm>
- Cook, A., Kornfield, T., and Gold, M.: The Role of PBMs in Managing Drug Costs: Implications for a Medicare Drug Benefit. Report commissioned by the Henry J. Kaiser Family Foundation (Grant Number 99-1122B). Menlo Park, CA. January 2000.
- Dubois, R.W., Chawla, A.J., Neslusan C.A., et al.: Explaining Drug Spending Trends: Does Perception Match Reality? *Health Affairs* 19(2): 231-239, 2000.
- Etheredge, L.: Purchasing Medicare Prescription Drug Benefits: A New Proposal. *Health Affairs* 18(4):7-19, 1999.
- Grabowski, H. and Mullins, C.D.: Pharmacy Benefit Management, Cost Effectiveness Analysis and Drug Formulary Decisions. *Social Science Medicine* 45(4):535-544, 1997.
- Huskamp, H.A., Rosenthal, M.B., Frank, R.G., and Newhouse, J.P.: The Medicare Prescription Drug Benefit: How Will the Game Be Played? *Health Affairs* 19(2):8-23, 2000.
- Iglehart, J.K.: The National Committee for Quality Assurance: Health Policy Report. *The New England Journal of Medicine* 335(13):995-999, 1996.
- Joint Commission on the Accreditation of Health Care Organizations: *Listed Performance Measurement System Matrix, 2001*. Internet address: http://www.jcaho.org/trkhco_frm.html
- Kreling, D.H., Lipton, H.L., Collins, T.C., and Hertz, K.C.: Assessment of the Impact of Pharmacy Benefit Managers. Final Report to Health Care Financing Administration, Pub. No. PB97-103683. National Technical Information Service. Springfield, VA. 1996.
- Levit, K., Cowan, C., Lazenby, H. et al.: Health Spending in 1998: Signals of Change. *Health Affairs* 19(1):124-132, 2000.
- Lipton, H.L., Gross, D.J., Stebbins, M.R., and Syed, L.H.: Managing the Pharmacy Benefit in Medicare HMOs: What Do We Really Know? *Health Affairs* 19(2):42-58, 2000.
- Lipton, H.L., Kreling, D.H., Collins, T.C., and Hertz K.C.: Pharmacy Benefit Management Companies: Dimensions of Performance. *Annual Review of Public Health* 20:361-401, 1999.
- Luce, B.R., Lyles, C.A., and Rentz, A.M.: The View from Managed Care Pharmacy. *Health Affairs* 15(4):168-176, 1996.
- McClellan, M., Spatz, I.D., and Carney S.: Designing a Medicare Prescription Drug Benefit: Issues, Obstacles, and Opportunities. *Health Affairs* 19(2):26-41, 2000.
- National Committee for Quality Assurance: *Survey Guidelines for the Accreditation of MCOs: Effective July 1, 2001*. 228. National Committee for Quality Assurance. Washington, DC. 2000a.
- National Committee for Quality Assurance: HEDIS®, *2000 Narrative: What's in It and Why It Matters*, Volume I. National Committee for Quality Assurance. Washington, DC. 1999.
- National Committee for Quality Assurance: HEDIS®, *2001 Technical Specifications, Volume II*. National Committee for Quality Assurance. Washington, DC. 2000b.

Pharmacy Benefit Management Institute, Inc.: *HMO-PBM Market Share and Formulary Management Report*, 2001. Internet address: <http://www.pbmi.com/hmopbm.pdf>.

Pharmacy Quality Council: *Summary of National Pharmacy Quality Measures*. Pharmacy Quality Council. Alexandria, VA. 1999.

Schulman, K.A., Rubenstein, L.E., Abernethy, D.R., et al.: The Effect of Pharmaceutical Benefit Managers: Is It Being Evaluated? *Annals of Internal Medicine* 124(10):906-913, 1996.

Silverman, J.E. and Rosen, T.R.: The Case for Pharmacy Report Cards. *Journal of Managed Care Pharmacy* 5(3):176, 1999.

U.S. General Accounting Office: *Pharmacy Benefit Managers: Early Results on Ventures with Drug Manufacturers*. GAO/HEHS-96-45. General Accounting Office. Washington, DC. November 1995.

U.S. Office of the Inspector General, Department of Health and Human Services: *Experiences of Health Maintenance Organizations with Pharmacy Benefit Management Companies*. U.S. Government Printing Office. Washington, DC. 1997.

Reprint Requests: Marjorie R. Hatzmann, M.B.A., The MED-STAT Group, Inc., 4301 Connecticut Avenue, NW, Suite 330, Washington, DC 20008. E-mail: marjorie.hatzmann@medstat.com.