Pharmacy Management Strategies for Improving Drug Adherence

William K. Fleming, PharmD

ABSTRACT

BACKGROUND: Significant gaps in quality pervade U.S. health care, leading to suboptimal care and rising costs. One key factor driving the apparent quality gaps and rising costs in the current health care system is the issue of nonadherence to prescription medications.

OBJECTIVE: To describe quality gaps in managed care that are driven by nonadherence to prescription medications and characterize the components of successful pharmacy management strategies for overcoming nonadherence.

SUMMARY: Collaborative networks and medication therapy management (MTM) programs are 2 pharmacy management initiatives that are useful in reducing medication nonadherence among plan members. The Pharmacy Quality Alliance has laid the foundation for developing useful pharmacy quality metrics, aggregating data, and reporting to both consumers and pharmacies. At the same time, the National Committee for Quality Assurance has developed MTM measures to monitor pharmacy quality. Both organizations have used Medicare Part D as an impetus for these initiatives in an effort to assess the value of the high-cost investment in prescription drugs resulting from the government mandate.

CONCLUSION: Managed care stakeholders should strive toward a value-based health care system by investing more on appropriate medication use, including initiatives to reduce nonadherence and avoid the high costs of treating severe disease in the future.

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Author

WILLIAM K. FLEMING, PHARMD, is Vice President, Pharmacy and Clinical Integration, at Humana Inc., Louisville, Kentucky.

AUTHOR CORRESPONDENCE: William K. Fleming, PharmD, Vice President, Pharmacy and Clinical Integration, Humana, Inc., 500 West Main Street, Louisville, KY 40202. Tel.: 502.580-3557; Fax: 502.508-3557; Email: wfleming@humana.com

While there have been improvements in health care since the inception of managed care, significant gaps in quality pervade the current U.S. health care system. According to Healthcare Effectiveness Data and Information Set measures, an average gap of 12.1% exists between top-performing plans and the system in its entirety.^{1,2} These gaps in quality result in an estimated 16,800-39,900 avoidable deaths, 45 million sick days, and \$7.4 billion in lost productivity every year.² At the same time, health care costs continue to hit all-time highs, with total spending topping \$2 trillion in 2006.³

One key factor driving the apparent quality gaps and rising costs in the current health care system is nonadherence to prescription medications. Adherence to long-term therapy for chronic diseases in developed countries averages 50%, and the consequences of nonadherence include poor health outcomes and increased health care costs.⁴ U.S. studies have shown that poor adherence to medication causes an estimated 125,000 deaths annually and also accounts for 10% of hospital and 25% of nursing home admissions.^{5,6} These statistics result in an estimated \$100 billion in additional health care costs each year in the United States.⁵

Nonadherence occurs for many different reasons. Patients often fail to either fill or take their prescriptions for chronic conditions, but they may also discontinue their medication early or take their medication less often than indicated. This latter form of nonadherent behavior is perhaps the most common phenomenon, with nearly 1 in 3 people reporting that they take a prescription medication less often than prescribed (Figure 1).⁷ The implications of these various forms of nonadherent behavior are significant. Even small gaps in therapy, such as those created by a missed prescription fill or a skipped week of taking prescribed medications, may negate the benefits of regular therapy. Although less apparent than direct patient nonadherence, suboptimal treatment regimens or higher-than-recommended doses can also contribute to adherence issues and gaps in quality.

In response to these significant issues surrounding nonadherence, key policy and quality organizations have called for action to address improvements in the management of medications. These management strategies, such as collaborative networks and medication therapy management (MTM) programs, may lead to a reduction in overall health care expenditures by optimizing therapeutic outcomes, especially in elderly patients. These improved health outcomes should in turn elicit a reduction in adverse medication events along with their attendant emergency room visits and hospital stays, thereby ultimately resulting in reduced expenditures for managed care organizations.

Collaborative Networks: The Pharmacy Quality Alliance

Collaborative networks in managed care pharmacy are designed to measure pharmacy quality with the goal of reporting meaningful

information to the public, pharmacies, and pharmacists. The end goal of these initiatives is to improve outcomes in the way in which pharmaceutical care is delivered. Founded in 2006, the Pharmacy Quality Alliance (PQA) was the first such organization to attempt this undertaking in the United States, driven largely by the implementation of Medicare Part D. For a nationwide government initiative such as Part D, some measure of pharmacy quality is imperative, primarily in determining whether the billions of dollars spent on prescription drugs resulted in an improvement in quality of care and/or reduced costs elsewhere in the health care system. The PQA strives to be the consistent, standard-setting body so that the value of the investment in prescription drugs (both commercial and Part D), as well as other significant investments, can be determined.

The PQA features a steering committee of 15 stakeholders representing assorted organizations, corporations, and employers.⁸ In addition, the PQA has more than 100 volunteer members who offer a broad representation of the different facets of pharmacy practice including health plans, pharmacy benefits managers, drug manufacturers, biotechnology companies, health care standard-setting groups, and pharmacy-related associations, with the following mission:⁸

“To improve health care quality and patient safety through a collaborative process in which key stakeholders agree on a strategy for measuring performance at the pharmacy and pharmacist-levels; collecting data in the least burdensome way; and reporting meaningful information to consumers, pharmacists, employers, health insurance plans, and other health care decision makers to help make informed choices, improve outcomes and stimulate the development of new payment models.”

Essentially, the PQA is seeking to establish the type of robust measures for pharmacy that have already been established in the general health care community by such organizations as the American Quality Alliance, National Committee for Quality Assurance (NCQA), National Quality Forum, Hospital Quality Alliance, and so forth. Although separate from these entities, the PQA was founded on the principle that health care stakeholders must find a way to harmonize measures across disciplines and arrive at a point of shared responsibility for improving patient outcomes.

The bulk of the PQA's mission is accomplished through working groups. Initially, there were 2 groups: the Quality Metrics work group determined what markers would be measured, while the Data Aggregation Reporting work group determined how these markers would be measured and to whom it was reported. More recently, the PQA has developed 2 other work groups: the Research Coordinating Council who focuses on research and demonstration projects for future PQA measures and the Education and Communications work group who focuses on education and outreach efforts for disseminating the information collected by the PQA.

FIGURE 1 Frequency of the Most Common Types of Noncompliant Behavior

The Boston Consulting Group and Harris Interactive.⁷

TABLE PQA Initial Starter Set

- 14 cardiovascular disease measures
- 5 measures in diabetes
- 2 measures in hyperlipidemia
- 4 measures in respiratory disorders
- 9 measures in the area of patient safety
- 3 measures in the generic efficiency area
- 12 of 37 measures address adherence/compliance

PQA = Pharmacy Quality Alliance.

At the outset, the Quality Metrics group developed the initial set of 37 starter metrics to outline/identify what should be monitored to measure pharmacy quality. These measures span several disease states and areas of drug administration including cardiovascular disease, diabetes, hyperlipidemia, and patient safety. While not all of these initial measures passed field testing, nonadherence was nevertheless an underlying theme, with 12 of the 37 metrics addressing medication adherence (Table).

In developing these measures, the Quality Metrics group commissioned several groups in specific areas (e.g., cardiovascular disease, diabetes) to devise the actual metrics, develop the numerators and denominators, and formulate how these measures would be reported. An example of the considerations necessary for this process that are specific to nonadherence can be found in the gap in therapy metric, which measures the percentage

of prevalent users who experienced a significant gap in medication therapy, defined as 30 days in a 6-month measurement period. This metric was developed on the premise that there are certain patients who experience a gap in therapy that may lead to an adverse event. Whether dealing with cardiovascular disease, diabetes, or any number of other diseases, measuring gaps in therapy is an important piece in the measurement of overall pharmacy quality. In promoting efforts to address nonadherence, the PQA developed a metric for proportion of days covered (PDC), defined as the median proportion of days covered by therapy, with the goal of further assessing the proportion of patients meeting the PDC threshold. Here again, medication adherence was given significant consideration by the group as being a measure of pharmacy quality, particularly because the interaction between pharmacist and patient in the pharmacy has the potential to positively impact the patient's medication adherence.

The application of these 2 metrics to diabetes therapy provides a good example of their utility. As mentioned previously, the gap in therapy metric looks at a 30-day period of nonadherence constituting significant lapse. In this example, the group came back with a list of several diabetes agents to be evaluated for gaps in therapy including sulfonylureas, meglitinides, biguanides, thiazolidinediones, alpha-glucosidase inhibitors, all insulins, dipeptidyl-peptidase 4 inhibitors, and incretin mimetic/amylinomimetic agents. Pharmacy claims data were used as the primary source of data for this metric on a go-forward basis.

The PDC metric for diabetes measures the proportion of days in the follow-up period "covered" by prescription claims for the medication(s) used to treat diabetes. Here, the follow-up period includes the days between the initial claim and the end of the measurement period, and each day in the follow-up period is determined to be "covered" (or not) based on the Quantity Dispensed and Days' Supply fields for prescription claims for medications used to treat diabetes. The PDC threshold is defined as the level of PDC above which the treatment regimen has a reasonable likelihood of achieving most of the potential benefit. The group recommended a preliminary threshold of 60% in light of the potential uncertainty in data collection and quality. For this metric, similar to the gap in therapy metric, a number of diabetes therapies are included, and pharmacy claims data are the primary data source.

The suboptimal treatment regimen metric for diabetes looks at patients receiving less-than-ideal therapy from a different perspective. This metric measures the percentage of patients who have been dispensed medications for diabetes and hypertension who are not receiving an angiotensin-converting enzyme inhibitor or angiotensin II receptor blocker. This oversight can be regarded as an omission of therapy, and it can also apply to an asthmatic who is not receiving a steroid or any number of other scenarios.

Conversely, the PQA also looks at medication overuse as a measure of quality because dosing at higher-than-recommended

levels can lead to hospitalizations and other adverse events. For diabetes, the medication overuse dosing metric is defined as the percentage of patients receiving an oral hypoglycemic agent at doses exceeding Food and Drug Administration-approved labeling. This measure is calculated at monthly intervals during the measurement period within a population known to be taking oral hypoglycemics. The denominator for this measure is the number of adults with ≥ 2 claims for an oral hypoglycemic agent who were continuously enrolled in a drug plan during the 6-month observation period.

In terms of reporting, the PQA has accomplished a number of objectives in 2006 and 2007, including the development of principles of reporting to pharmacists and pharmacies as well as to the public. Upon performing an environmental scan, the alliance found that few reports identifying the attributes of good pharmacy quality were available in the United States for pharmacies, pharmacists, and consumers. While other examples in health care do exist, including a compendium of report cards by the Agency for Healthcare Research and Quality, report cards in pharmacy are lacking aside from 1 example in Australia.⁹ In response to the lack of pharmacy reports, the PQA's Reporting work group was organized into 2 teams: one to work on the public reporting template and one to work on the pharmacy and pharmacist reporting template. The resulting model reporting template was put into field testing at the end of 2007.

Also in 2007, the PQA's Reporting work group was expanded to include data aggregation because a significant amount of groundwork had to be established for the alliance to understand the sources of data and devise ways to pull the sources together so that the data could be reported more broadly. As such, the Data Aggregation and Reporting work group was charged with creating strategies for obtaining data, formulating the architecture for how data would be reported, detailing the nomenclature that would be used, and developing reporting tools.

Two different sets of data are important when reporting to consumers and pharmacies/pharmacists, and the PQA is reviewing how this desire for information is changing to include more crossover between the groups. Typically, consumers want information regarding the location of pharmacies, pharmacy hours (i.e., whether a pharmacy is open 24 hours), whether a pharmacy offers compounded prescriptions, whether a bilingual staff is available, and whether there are drive-through or home delivery options available from the pharmacies. The PQA took this one step further from the traditional consumer-driven reporting scheme and is investigating offering information to consumers about drug adherence rates, hemoglobin A1c measures, and hyperlipidemia measures for various pharmacies. Whereas pharmacies are traditionally involved with measures, such as generic dispensing rates and their generic index, the PQA is looking at offering pharmacies some of the same information they are testing on consumers. This information, such as data regarding adherence rates, hemoglobin A1c measures, and beta-blocker

use measures, will allow pharmacies to determine how they are performing in relation to the average in each of these categories.

In bringing about this more comprehensive approach to traditional pharmacy and consumer reporting, the PQA is striving to provide the level of information that people really want. Consumers will be able to review the data and then take action because the information is unbiased. This more informed generation of consumers will inevitably push pharmacy practice to a higher level than has yet been conceived.

All of the aforementioned starter metrics and demonstration projects have yielded little data to date, but more robust data are expected later in 2008 and into 2009. Only then will stakeholders be able to assess where the PQA has been and what the alliance has been able to accomplish in pushing the practice of pharmacy forward.

Medication Therapy Management

MTM represents another pharmacy management strategy for improving medication nonadherence. MTM is based on the premise that taking steps to improve medication management can strengthen the pharmacy care model by increasing the targeting of drug therapy problems, establishing focused medication management interventions, and developing a framework that is patient centered. The desired result of such programs is the integration of pharmacy services into the mainstream of U.S. health care. By facilitating these services, managed care organizations can reduce drug therapy problems and improve health and economic outcomes.

While many plans have been implementing MTM-like programs over the years, there has been industry pressure, in part due to the implementation of Medicare Part D, to measure pharmacy quality and make it more broadly available across the industry, not only for Medicare plans but also for commercial plans. This increased pressure has led the NCQA to develop new MTM measures for 2007 including annual monitoring for patients on persistent medications, potentially harmful drug-disease interactions in the elderly, and use of high-risk medications in the elderly.

In conjunction with these new MTM measures, the NCQA has introduced relative resource use measures to assess value of care.¹ When using these measures, plans report total resource use across various service categories, including medical and pharmacy utilization within select disease categories. In 2007, these categories were diabetes, asthma, and low back pain; in 2008, plans will report on chronic obstructive pulmonary disease and cardiovascular disease. After reporting is complete for the calendar year, costs are standardized and data are risk adjusted so that plans can be compared with one another on relative resource use. In concert with quality measures, these relative resource use measures can be employed to assess relative health plan value.

Using a scatter plot of relative quality graphed against relative resource use, the distribution of commercial plans according to

FIGURE 2 Diabetes Relative Resource Use in Terms of Medical Costs^a for Commercial HMO/POS, 2006

ISQua=International Society for Quality in Health Care, Inc., October 1, 2007.

^aDiabetes, medical costs; includes inpatient facility costs, evaluation and management costs, and surgery costs; excludes pharmacy costs.

HMO=health maintenance organization; POS=point of service; Rx=prescription.

FIGURE 3 Diabetes Relative Resource Use in Terms of Outpatient Pharmacy Costs for Commercial HMO/POS, 2006

ISQua=International Society for Quality in Health Care, Inc., October 1, 2007.

HMO=health maintenance organization; POS=point of service.

the relative resource use measures can be observed. For example, in diabetes management, relative resource use for commercial plans is viewed in terms of both medical costs (excluding pharmacy costs) and outpatient pharmacy costs (Figures 2 and 3, respectively).¹ In these scatter plots, each dot denotes a commercial plan's position on the continuum of relative resource use versus relative quality. Plans falling in the upper left shaded portion of the plot have theoretically ideal relative resource use because their resource use is low with respect to high relative quality. Plans falling in the lower right-hand corner of the plot have theoretically suboptimal relative resource use because their resource use is high with respect to low relative quality.

Conclusions

Managed care stakeholders should strive toward a value-based health care system by investing more on appropriate medication use, including initiatives to reduce nonadherence to avoid the high costs of treating severe disease in the future. Collaborative networks and MTM are 2 such initiatives that are useful in reducing medication nonadherence among plan members. The PQA has laid the foundation for developing useful pharmacy quality metrics, aggregating data, and reporting to both consumers and pharmacies in spearheading this effort. At the same time, the NCQA has developed MTM measures to monitor pharmacy quality. Both organizations have used Medicare Part D as an impetus for these initiatives in an effort to assess the value of the high-cost investment in prescription medications that accompanies the government mandate.

Data reported from these initiatives will become available to a wide array of stakeholders, including consumers who are becoming more informed and are thus driving improvements in pharmacy quality by making educated choices in health care. Likewise, a wide array of stakeholders will need to be involved in the development and implementation of pharmacy management efforts to represent the interests and points of view of all areas of pharmacy in design and decision making. Thus, a well-rounded and organized approach involving the collaboration of pharmacies,

pharmacists, payers, employers, and quality-assurance organizations is critical to improving quality in treatment adherence and ultimately in lowering costs. The resulting system of measurement and reporting will provide evidence of improvements in pharmacy quality many years after the advent of Medicare Part D, thereby demonstrating the value of large-scale investments in managed care pharmacy.

DISCLOSURE

Author William K. Fleming discloses that there was no financial relationship or financial interest relating to the topic of this activity. Fleming was responsible for the entire study concept and design of this article. He performed all of the data collection, data interpretation, writing, and revision of this article.

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