

The Role of Neuropsychiatric Pharmacists

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A modern pharmaceutical care model widens the traditional pharmacy role of medication dispenser to educator and information manager. The broad goals of a modern pharmacy service are to improve the efficiency and safety of drug therapy, to improve patient satisfaction and quality of life, to ensure medication compliance, to save time for physicians and other members of the health care team, and to save money. In this new model, drug acquisition costs are considered as a part of a total health care budget rather than as a single segment to be controlled irrespective of impact on other parts of the budget. More than 80% of patients with schizophrenia who are treated with conventional neuroleptics are rehospitalized within 2 years, and controlled studies have shown that inpatient costs are lower when atypical antipsychotics are used instead of typical antipsychotics. In the future, pharmacy departments with narrow responsibilities are likely to give way to a pharmaceutical care service in which the pharmacist is a vital member of the health care team.

(J Clin Psychiatry 1999;60[suppl 19]:54-57)

Pharmaceutical care is a process in disease state management. In a pharmaceutical care model, the use of cognitive or clinical psychiatric services is justified by careful documentation for a period of time before and after a regimen is begun of the total number of prescribed drugs per patient, the number of doses administered per patient day, the annual hospital readmission rate, and the number of anticholinergic prescriptions written for each patient. Other components of a pharmaceutical care model include providing information about medications to health care providers as well as training the pharmacists of the future, paying attention to medical-legal issues, acquiring knowledge of new drug therapies, and listening to all the individuals involved in caring for patients. Pharmacists are often able to facilitate dialogue in a very nonthreatening way on a variety of levels. Traditionally viewed only as medication dispensers, pharmacists today are a vital part of the health care team. Neuropsychiatric pharmacists in particular serve both as educators and as portals of information about medication. While they continue to be responsible for the distribution of medications, their formulary responsibilities have broadened to include clinical activities and information management.

DISTRIBUTIVE SERVICES

Among the broad goals of a modern pharmacy service are (1) to improve the efficiency and safety of drug therapy, (2) to improve patients' satisfaction with care and quality of life, (3) to ensure medication compliance, (4) to save time for physicians and other members of the health care team, and (5) to save money (Table 1). Pharmacists are required to monitor whether drugs are used safely and for indications that appear to be appropriate for patients, who often are confused about dosing and scheduling. Since many psychotropic agents interfere with cognitive function if they are taken incorrectly, psychiatric patients who have a complicated medication regimen may need help in establishing a daily schedule. Pharmacists can often help patients consolidate the medications they take by investigating whether the total number of doses or pills could be reduced and by following up to see if patients are following physicians' instructions. For example, I had a patient who was taking about 20 different medications and decided to take them all at bedtime to make himself sleep better. Compliance is usually improved when patients find the medication regimen to be manageable. Also, the efficiency of physicians and other health care providers can be improved and duplication of effort prevented when pharmacists assume the responsibility for being monitors of information for a health care team.

Most pharmacists understand the importance of tracking the costs of drug utilization, and recently there has been a keen focus on the acquisition cost of psychiatric drugs, which in 1990 represented 2% of the overall health care budget.¹ Drug acquisition expenses should be considered as one among many components of the total costs of

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Presented at the symposium "Antipsychotic Agents: Clinical, Economic, and Legal Considerations in the Treatment of Psychosis," held October 19-20, 1998, in Washington, D.C., and supported by an unrestricted educational grant from Eli Lilly and Company.

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Table 1. Role of Pharmacy Service in a Pharmaceutical Care Model

Improve efficiency and safety of drug therapy
Improve patient quality of life
Improve patient satisfaction
Save time of physicians and other members of health care team
Save money
Ensure compliance

patient care rather than as a single line item on a departmental budget. While cost-effective delivery of services is an important pharmacy goal, all members of the health care team need to understand how efforts to improve efficiency in one area impact the overall cost of health care. Until recently, pharmacists have been considered the drug police responsible for driving the use of less expensive products because of the silo mentality that has guided the current health care system. However, concentration on single budget lines such as the acquisition cost of drugs can work against the goal of providing the best care to patients and can increase overall costs. Soumerai et al.² conducted a retrospective study of a New Hampshire policy that limited the number of Medicaid prescriptions that could be filled each month. Prescription costs immediately decreased—around 15% for antipsychotics, 40% for antidepressants and lithium, and 50% for anxiolytics and hypnotics. The cap also resulted in coincident increases of 1 to 2 visits per patient per month to community mental health centers and sharp increases in the use of emergency mental health services. Later inspection proved that the total per patient costs actually increased by a factor of 17.

EDUCATION

Pharmacists serve multiple roles in the education of patients and other members of the health care team. At inpatient institutions, pharmacists are frequently involved in patient education, which must be tailored to the individual patient's level of functioning and comprehension. Before discharge, patients need to understand the medication regimen, e.g., the name, description, dosing, and proper storage of each drug; targeted symptoms, possible adverse effects and drug interactions; and, if appropriate, special information about use of the drug during pregnancy and lactation. To ensure that patients do not fall through the cracks, pharmacists can check to see if patients have an adequate supply of medication and a discharge prescription when they leave the facility. Pharmacists can also obtain informed consent from patients and document the education session and consent form in the patient's record. Sometimes pharmacists can provide group and/or family education about medication. On an inpatient unit, pharmacists also play a key role in providing information about drugs to physicians, nurses, and other mental health professionals. For example, pharmacists can provide in-

service presentations regarding the adverse effects of newer agents.

In Oklahoma, my colleagues and I bring in-service educational programs about medication to rural areas and are developing a distance learning program for these small communities. At the University of Oklahoma, I lecture in the nursing program about the use of medication and in the dental program about potential interactions between psychotropic drugs and anesthetic agents.

INFORMATION PORTALS

The role of the pharmacist is expanding beyond distribution and education. In rural communities, in particular, pharmacists are tremendously underutilized. Many small towns are more likely to have a full-time pharmacist than a full-time physician, and that pharmacy could be a site for a regular visit by a phlebotomist. The pharmacist could be a portal of information for managed care organizations; he or she could monitor blood drug levels, for example. This kind of clinical pharmacy could be practiced in large hospitals and individual homes as well as rural communities. Clinical activities for pharmacists include doing medication reviews, suggesting therapeutic alternatives, obtaining medication histories, and providing specialty consultations.

Physicians' time can be saved when regular medication reviews are conducted by pharmacists, and medication reviews were found to identify potential or real drug therapy problems at a rate corresponding to 8 problems per every 10 beds annually in a skilled nursing facility.³ Medication reviews are particularly helpful for determining the course of action in treatment-resistant patients and for justifying the use of clozapine and other treatments that either cost more or are more toxic than alternatives. The process should involve taking a medication history, reviewing the use of current medication, and monitoring the results of laboratory tests. The medication history should document prior use of prescription and nonprescription medication, tobacco, alcohol, caffeine, and recreational drugs as well as a family history of medication use and response. Since the records of patients with serious mental illness are often voluminous, the pharmacist, by carefully reviewing a record, can provide documentation of dosage history and duration of each medication trial as well as adverse reactions reported by the patient, which will help the physician determine which medications and augmentation strategies to try.

The medication review should also include an examination of the specific indications for and dosing of all medications in the patient's regimen as well as a review of the results of recent laboratory tests for signs of drug interactions. My colleagues and I routinely review the record of patients in the Oklahoma State mental health system twice a year. Since patients may see a psychiatrist every 2 or 3 months, we can provide information to the physicians between visits. If patients are taking a medication such as

clozapine that requires intensive blood monitoring, we maintain records of the laboratory results. The medication review is particularly valuable in documenting the course of illness for refractory patients and often provides information to explain why a patient is or is not responding to a novel drug therapy.

When the medication review is completed, pharmacists can report adverse effects such as abnormal involuntary movements to physicians, identify target symptoms that need to be monitored, establish desired measurable outcomes, and catalog drug costs. Pharmacists can also establish protocols to help the staff of group homes oversee residents' use of medication. If a patient fails to respond completely to a specific drug, pharmacists can recommend augmentation strategies or alternative treatments to the physician as well as document all findings in the medical record and follow up to make sure physician instructions are implemented. On a more global level, pharmacists maintain ongoing audits for every prescription order to verify accuracy and proactively try to make changes that optimize patient care. This process should be completed before medications are dispensed and administered to patients.

Some patients require extensive individualized medication consultations. In Oklahoma, such specialty consultations are funded by the state and completed at the request of, for example, a case manager, a nurse, or a physician involved in the care of a particular patient. The medications are reviewed to make sure that there is an existing psychiatric diagnosis that justifies use of each agent. If such an indication is lacking, the pharmacist requests a clarification from the physician who wrote the prescription. These individualized consultations can be brief or extensive, written or verbal, depending on the circumstances. While they are normally completed during the workweek, a pharmacist is available by pager for telephone consultation if there is an urgent case over the weekend.

FORMULARY ACTIVITIES

The process of formulary decision-making has changed over the years. At one time, most pharmacies maintained large inventories, which increased the cost of adding new agents. Generally when a new agent was stocked, an older one was removed from the pharmacy. Today, however, because of changes in pharmacy management and drug distribution, it would be uncommon to maintain more than a 3- to 4-week supply of any agent. Periodic class reviews provide assurance that all the drugs in the formulary are necessary, and the onus is on the pharmacist to demonstrate that all the available medications continue to be of value to the patients. Formulary decisions are ideally based on efficacy, cost, and acceptability of the drug. In addition to managing a formulary, pharmacists today are likely to collaborate with psychiatrists to develop treatment algorithms and guidelines for drug classes and dis-

ease states as well as write monographs describing the use of specific agents.

At one time, pharmacists were the drug police; their role was to make sure the least expensive effective medication was chosen over more expensive agents. When the atypical antipsychotics first became available, the rubric was that patients had to have failed multiple trials of older, less expensive medications before one of the newer, more costly agents could be tried. However, a growing body of pharmacoeconomics literature has provided evidence that using agents with a more favorable side effect profile, even if they are more costly, improves compliance and often reduces overall health care costs. Well-controlled responder studies have shown that the beneficial outcomes of atypical antipsychotic treatment have compensated for the high acquisition costs.⁴⁻⁸ For example, in an analysis of data from the international olanzapine studies, total mean medical costs over 1 year of follow-up were \$345 per month less for the olanzapine-treated patients than for the haloperidol-treated patients due primarily to lower inpatient costs.⁸ Today, the atypical antipsychotics have become first-line treatment because of their lack of serious side effects, particularly extrapyramidal symptoms and tardive dyskinesia.

The role of the pharmacist extends well beyond formulary responsibilities. Continuous quality improvement comes when pharmacists assist in identifying drug classes or disease states to be monitored on the basis of individualized consultations with consumers. Pharmacists can monitor records and generate reports about actual drug usage and outcomes when various drugs are used to treat a specific disorder. Pharmacists can also provide a pharmacokinetic/toxicology service to physicians by reviewing laboratory tests and flagging records where the blood drug concentration is above or below the accepted therapeutic range or other results are abnormal. They then can perform a medication review for those patients with flagged test results and recommend medication adjustments to the physician. In Oklahoma, an atypical antipsychotic pharmacy service began when clozapine was introduced. The pharmacy service enrolled patients in the clozapine monitoring program, followed up to make sure patients came in for weekly blood draws, and checked test results to see if hematologic parameters were within the accepted range. This program has enabled the state to gather data on response to atypical antipsychotics as well as to control the budget. Finally, the pharmacy can maintain patient profiles—a requirement in most inpatient institutions—to assure rapid access to patient information for the treatment team and to facilitate medication reviews.

Pharmacists are integral members of the treatment team who provide information about medication, assist in patient assessments, identify available resources, and monitor follow-up care. Traditionally, they oversee adverse drug reaction reporting. First, adverse reactions to drugs

are identified through interaction with patients or referral from other members of the health care team. The necessary forms are completed and reported to the hospital pharmacy and therapeutics committee or, if significant, to the U.S. Food and Drug Administration and/or the pharmaceutical company. At research centers, pharmacists assist in designing protocols for controlled studies of investigational drugs. They also help recruit patients for clinical studies, obtain informed consent from subjects, perform evaluations and ratings, and complete clinical report forms.

One key role of pharmacists is helping patients make the transition from an inpatient to an outpatient setting. The costs of using a specific medication during an inpatient stay are minimal compared with the total hospital costs. However, as soon as an inpatient becomes an outpatient, the medication cost, incrementally, is significantly greater. It is not uncommon for treatment with an atypical antipsychotic to be started in a hospital and discontinued in favor of a conventional neuroleptic as soon as the patient is enrolled in a community mental health center where medication is a substantial part of the budget. More than 80% of patients with schizophrenia who are treated with conventional neuroleptics are rehospitalized within 2 years.⁹ Pharmacists are in a key position to oversee continuity of care during the transition to outpatient status and thus minimize use of the revolving door between the hospital and the community mental health center.

CONCLUSION

The role of community pharmacists is increasingly focused away from dispensing drugs and toward patient advocacy. In the future, pharmacists will meet the expanded need for patient monitoring and database maintenance as well as serve as portals of entry into a managed care center. Pharmacists should realize that the day of narrowly

defined departments and line-item budgets must give way to the pharmaceutical care model in which pharmacists serve as vital members of a health care team whose overall goal is providing the most effective care in the most efficient manner.

Drug names: clozapine (Clozaril), haloperidol (Haldol and others), olanzapine (Zyprexa).

Disclosure of off-label usage: The author of this article has determined that, to the best of his knowledge, no investigational information about pharmaceutical agents has been presented herein that is outside Food and Drug Administration–approved labeling.

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