

## Development and Evaluation of a Pharmacist-Directed Pharmacotherapy Center

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*This article is designed for ambulatory pharmacy specialists, pharmacy administrators, and managed care pharmacy and/or medical directors interested in developing systems for improved drug therapy outcomes.*

### GOAL

To describe an alternative method for the effective delivery of pharmaceutical care.

### OBJECTIVES

1. Identify the barriers to delivery of pharmaceutical care in current systems.
2. Describe the steps to take to implement a referral-based pharmaceutical care service.
3. Describe the financial and patient satisfaction outcomes of a referral-based pharmacy.
4. Describe the services that can be offered by a referral-based pharmacy.

It has been more than 8 years since Hepler and Strand introduced the philosophy of pharmaceutical care and outlined its process.<sup>1</sup> Adopting this philosophy would require us, as a profession, to move from a product focus to a patient focus. We would have to accept responsibility for ensuring rational drug therapy and achieving positive therapeutic outcomes. We would have to develop practice models that would incorporate the three primary functions of pharmaceutical care: (1) identifying potential and actual drug-related problems; (2) resolving actual drug-related problems; and (3) preventing potential drug-related problems.<sup>1</sup> In fact, the profession of pharmacy has quickly embraced the concept and adopted the provision of pharmaceutical care as its mission.

This new mission could not have come at a more opportune time. No one knows the exact cost of drug-related morbidity and mortality, but estimates have ranged from \$7 billion to as high as \$76.6 billion per year.<sup>12</sup> We also know that clinical pharmacy services can effectively decrease these costs.<sup>3-5</sup> However, in order to fully implement the principles of pharmaceutical care and take advantage of this incredible opportunity, numerous obstacles must be overcome.

As early as 1990, barriers to the implementation of pharmaceutical care were described.<sup>6</sup> Since that time numerous authors have addressed the issue, describing barriers that are educational, legal, structural, financial, attitudinal, resource-related, and demand-related.<sup>7-10</sup> Although lack of reimbursement is often cited as the major obstacle to the provision of pharmaceutical care in the community setting, a 1993 study identified heavy workload as the major factor.<sup>7</sup>

Regardless of the barriers identified, a number of practice models have been implemented that incorporate the principles of pharmaceutical care. Different approaches have been utilized depending on the practice setting and the barriers encountered.<sup>11-14</sup> This article describes one approach, taken at a major university hospital.



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**Background**

The University of Tennessee Medical Center is a 500-bed tertiary care facility. The Department of Pharmacy is staffed by 37 pharmacists and 33 technicians including 12 clinical pharmacist specializing in the areas of family medicine, internal medicine, transplantation, infectious disease, anticoagulation, pulmonology, oncology, pediatrics, cardiology, metabolic support, critical care, and drug information.

The Clinical Pharmacy Center is a division of the Department of Pharmacy. It is a pharmacist-managed pharmacotherapy center, staffed by pharmacists experienced in both ambulatory care and patient education and certified in asthma and diabetes management. The goals of the center are to identify and resolve drug-related problems, reduce drug-related healthcare costs, and offer high-level patient satisfaction. Referrals are accepted from physicians, pharmacists, and other healthcare professionals. Patients may also self-refer.

Prior to 1994 the department's ambulatory services consisted of an outpatient pharmacy providing prescription services for hospital employees, clinic patients, and patients being discharged from the hospital or emergency department. A clinical specialist spent a few hours per week in the internal medicine clinic precepting students and residents. In July 1994 one clinical specialist was dedicated full time to the internal medicine clinic and in July 1995 one specialist was dedicated to family medicine.

**Program Development**

Because of our success with the pharmaceutical care model in the internal medicine and family medicine clinics, we sought to broaden our scope of service in the ambulatory arena. The first target was our most visible area, the outpatient pharmacy.

*Barriers.* The first step in our process was to identify potential barriers to providing comprehensive pharmaceutical care in this setting. We felt that four barriers needed to be addressed before we could achieve our goals. These included time constraints for both pharmacists and patients, inadequate physical space, patients' perception of the pharmacist's role in the ambulatory setting, and lack of third-party reimbursement for cognitive services.

*TIME/SPACE.* After a thorough evaluation of existing ambulatory pharmacy services, we decided to focus our efforts solely on those pharmaceutical care services not routinely available in our community. By focusing only on specific therapies and services, we felt we would be able to save enough time and space to achieve our pharmaceutical care goals without requiring additional resources. A questionnaire was sent to area pharma-

cies requesting information on services currently available. Based on the information received, we identified several areas of need and established the therapy and service categories for which we would accept referrals. These are shown in the Table.

*PATIENT PERCEPTION OF THE PHARMACIST'S ROLE.* We felt strongly that in order to be perceived as a provider of care rather than a provider of product, all dispensing functions had to be removed from the patient care area. Only minor renovations were required to convert a small area of the pharmacy to a patient consultation area with a reception desk and a small waiting area. Our patients are now seen in an "office setting" and do, indeed, expect a different level of service. We have also utilized brochures, health fairs, community exhibits, and speaking engagements to further educate the public on the role of the pharmacist and the value of pharmaceutical care.

*REIMBURSEMENT.* A financial consultant investigated reimbursement strategies and outlined a reimbursement plan. Many pharmacy practices have been successful in billing third-party payers for pharmaceutical care services using the HCFA-1500 claim form and the Pharmacist Care Claim Form. Unfortunately, our hospital billing system cannot currently bill for cognitive services provided by pharmacists. Therefore, all revenue generated had to be the result of cash payment for services rendered and third-party reimbursement for covered products. A fee schedule was developed based on the average amount of time estimated to provide each service.

*Business Plan.* The success of the program would depend on the ability of the center to support itself

**Table.** Therapies and Services Offered by Pharmacotherapy Center

Therapies	
■	Immunosuppressants for renal transplant patients requiring Medicare billing
■	Investigational drugs for outpatient protocols
■	Unique products or dosage forms
■	Medications for indigent patients being discharged from the hospital
Services	
■	Patient/caregiver education
■	Compliance assessment and management
■	Drug therapy review
■	Asthma education/management

based on revenue generated plus cost savings realized through decreased utilization. The plan called for cost savings for those patients covered under capitated plans to be determined by comparing utilization of hospital services before and after referral to the center. Hospital indicators to be tracked would include admissions, length of stay, and emergency department visits.

Our financial goal for the program was to recover 80% of the center's operating expenses the first year and to break even the second year. Additional growth of 10% to 20% was expected in year three.

*Services.* In accordance with our mission of providing comprehensive pharmaceutical care, the Clinical Pharmacy Center offers services in the areas of patient education, compliance, drug therapy review, asthma management, and unique product provision.

Individualized patient/caregiver education is provided for specific therapies and disease states. The center's staff assesses the patient's current knowledge to determine gaps in understanding and identifies any special needs. Verbal instruction is reinforced with appropriate printed information.

The staff applies patient-specific techniques to help ensure compliance with drug therapy regimens. The compliance assessment begins by differentiating nonresponse from noncompliance, and identifying the patterns and reasons for the patient's noncompliance. Once a compliance plan has been designed and implemented, staff monitor the patient's behavior and carry out follow-up efforts if necessary.

Drug therapy review services aim to reduce the incidence of potential drug therapy problems. These services include identifying drug/drug, drug/disease, and drug/food interactions, as well as potential adverse drug reactions. In addition, problems that could arise from the patient's inability to carry out drug therapy as prescribed are addressed by identifying less expensive or more cost-effective alternatives and by confirming the patient's ability to follow the prescribed regimen.

The goals of asthma management are to prevent chronic disease symptoms, decrease emergency department visits and hospital admissions, maintain normal activity levels, prevent adverse drug effects, and prevent recurrent exacerbations. To help achieve these goals we offer patient and caregiver education; individualized treatment plans; and assessment, monitoring, and follow-up.

Finally, the center provides products not readily available in the community such as diagnostics and investigational drugs for outpatient protocols, as well

as unique dosage forms required to enable or enhance patients' adherence to treatment.

*Marketing.* Our marketing objectives were to build name recognition and service awareness for the Clinical Pharmacy Center. The first phase of the marketing strategy focused primarily on the medical staff and other healthcare professionals at the Medical Center. The second phase, implemented approximately 6 months later, was directed toward consumers. A third phase has been proposed that would target managed care organizations and utilize the telemedicine program to reach physicians and consumers at affiliate institutions and clinics.

*Staffing.* Because patients are seen by appointment, we are able to utilize our current clinical specialists and residents for many of our patient visits. Therefore, only 0.5 FTE pharmacist and 1.0 FTE technician are actually assigned to the Clinical Pharmacy Center.

### Operations

Patients are seen by appointment during the hours of 8:30 AM to 5:00 PM Monday through Friday. Evening appointments may also be arranged. Patients are referred to the Clinical Pharmacy Center by fax or telephone, after which the center's staff contacts the patient, sets up an appointment, and obtains any pertinent information from the patient's medical record. Patients are informed at the time the appointment is made that cognitive services are unlikely to be reimbursed by third-party payers and that cash payment will be required.

During the initial visit, staff create a patient chart. At the conclusion of each visit, if follow-up is needed, the patient receives further appointments. Staff document all patient care activities and send status reports to the referring physician. Before leaving, the patient receives a copy of the services rendered along with the charge for each service, with payment made immediately for all noncovered services.

### Experience

The Clinical Pharmacy Center was formally introduced to the medical staff via letter in August, 1996. Since that time the financial goals set forth in our business plan have been met and response to the program has been very positive. Physician referrals have come from the specialties of internal medicine, family medicine, and pediatrics and have included compliance assessment and management, asthma education, drug therapy review, and unique products and dosage forms. Self-referrals have included patient/caregiver education, asthma education, drug therapy review,

and unique products and dosage forms. Self-referrals are now exceeding physician referrals for noncovered services. We feel that this may be a result of physician hesitation to refer a patient for a service not covered by third-party reimbursement. Patients, on the other hand, have been willing to pay for cognitive services. We have experienced only two instances in which a patient chose not to keep an appointment because of cost or lack of third-party reimbursement.

To date we have obtained minimal outcomes data, as most of our patients have been private payers or enrolled in fee-for-service third-party plans. Tracking utilization for those capitated patients we have seen has been hampered by a lack of readily retrievable historical data. Also, because we were only tracking hospital costs, no savings could be achieved for patients who had not been admitted to the hospital or emergency department within the previous 12 months.

### Discussion

In addition to achieving our financial goals during the first 2 years of operation, the program continues to grow. In September 1998 we entered into an agreement with the Sangstat Medical Corporation (Menlo Park, CA) to provide clinical pharmacy services to our post-transplant patients who utilize the Sangstat prescription service. We have also considered adding a travel medicine service, which would be marketed to area travel agents.

As the managed care population grows in our area, cost savings will play a much larger role in the financial viability of our program. As such we must develop more efficient ways of tracking utilization costs and measuring outcomes. In order to achieve the greatest impact, we must target our efforts toward those patients with the highest drug-related utilization.

By establishing specific referral criteria and accepting patients by appointment, we have been able to utilize our resources efficiently and provide a high level of care to those patients with the greatest need.

When the Clinical Pharmacy Center was introduced, our goals were to identify and resolve drug-related problems, reduce drug-related healthcare costs, and achieve high-level patient satisfaction. During the past 2 years we have identified and resolved numerous drug-related problems, patient

response has been overwhelmingly positive, and we are currently developing more efficient ways of tracking the effects of our service on drug-related healthcare costs.

Based on the experience at one university hospital-based center, a referral-based pharmacotherapy center is an effective way of providing pharmaceutical care in an ambulatory setting. The next step is to document the value of such a service so as to further expand into the managed care arena.

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**Instructions**

After reading the article "Development and Evaluation of a Pharmacist-Directed Pharmacotherapy Center," select the best answer to each of the following questions, based on the example described in the article.

1. Which is not a barrier to implementing pharmaceutical care?
  - a) time constraints
  - b) inadequate space
  - c) product availability
  - d) patient perceptions
2. What is an important initial step in developing a referral-based program?
  - a) obtaining adequate space
  - b) marketing
  - c) identifying services not available in community
  - d) recruiting staff
3. Which of the following needs to be eliminated to change a patient's perception of the pharmacist's role as a consultant?
  - a) charging for services
  - b) dispensing functions
  - c) marketing

4. Which of the following are effective marketing activities?
  - a) health fairs
  - b) community exhibits
  - c) speaking engagements
  - d) all of the above
5. In addition to income, what other measurement of financial success can be used in this setting?
  - a) accounts receivable
  - b) reduced healthcare utilization
  - c) donations
  - d) charity care
6. A service not associated with this setting is:
  - a) asthma management
  - b) compliance assessment
  - c) patient education
  - d) self-diagnostic testing
7. The first marketing efforts should be directed to:
  - a) physicians
  - b) patients
  - c) health maintenance organizations
  - d) Medicare
8. Efficiency in staffing this type of service is realized by:
  - a) part-time staff
  - b) requiring appointments
  - c) use of fax machines
  - d) an answering service
9. In general, patients are unwilling to pay cash for pharmaceutical care.
  - a) true
  - b) false

(CPE QUESTIONS CONTINUED ON FOLLOWING PAGE)

**Development and Evaluation of a Pharmacist-Directed Pharmacotherapy Center**

(PLEASE PRINT CLEARLY)

Name \_\_\_\_\_

Home Address \_\_\_\_\_

City \_\_\_\_\_

State/ZIP \_\_\_\_\_

Daytime Phone # \_\_\_\_\_

States in which CE credit is desired: \_\_\_\_\_

Social Security # \_\_\_\_\_

Please circle your answers:

- |            |             |             |             |
|------------|-------------|-------------|-------------|
| 1. a b c d | 6. a b c d  | 11. a b c d | 16. a b c d |
| 2. a b c d | 7. a b c d  | 12. a b c d | 17. a b c d |
| 3. a b c   | 8. a b c d  | 13. a b c d | 18. a b     |
| 4. a b c d | 9. a b      | 14. a b c d | 19. a b c d |
| 5. a b c d | 10. a b c d | 15. a b c d | 20. a b c d |

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(continued from previous page)

- 10. Once a referral is made, the first step for the pharmacy staff to take is:**  
 a) contact the patient  
 b) establish insurance coverage  
 c) prepare a care plan  
 d) arrange for coverage
- 11. When a pharmaceutical care plan is developed, it should be provided to:**  
 a) the patient  
 b) the patient's caregiver  
 c) the referring physician  
 d) all of the above
- 12. Which of the following is a primary function of pharmaceutical care?**  
 a) identifying drug-related problems  
 b) resolving drug-related problems  
 c) preventing drug-related problems  
 d) all of the above
- 13. Physicians may be hesitant to refer because this type of service:**  
 a) is not covered by insurance  
 b) is too new  
 c) is run by pharmacists  
 d) is not well-received by patients
- 14. The greatest financial impact of this type of service is in:**  
 a) income generation  
 b) reducing the costs of drugs  
 c) reducing drug-related healthcare utilization  
 d) improved patient satisfaction
- 15. The provision of pharmaceutical care requires:**  
 a) a shift in focus from product to patient  
 b) a shift in focus from patient to product  
 c) accepting responsibility for therapeutic outcomes  
 d) a and c only
- 16. In order to demonstrate the financial impact in a capitated system, the following is needed:**  
 a) retrievable patient historical data  
 b) actuarial data  
 c) risk pool access  
 d) drug cost data
- 17. The estimated cost of drug-related morbidity and mortality has reached:**  
 a) \$5.4 million per year  
 b) \$50 million per year  
 c) \$76.6 billion per year  
 d) \$100 billion per year
- 18. Third-party reimbursement is essential for this type of service to be successful.**  
 a) true  
 b) false
- 19. The fee schedule for various services is based on:**  
 a) patient's ability to pay  
 b) physician charges  
 c) capitation rates  
 d) average time required
- 20. Which of the following are potential clients of this type of service?**  
 a) health maintenance organizations  
 b) pharmacy networks  
 c) physician networks  
 d) all of the above

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**CPE PROGRAM EVALUATION**

The University of Tennessee College of Pharmacy would like to have your opinion. Please fill out the questionnaire below, tear off along the dotted line, and mail along with your CPE test form. We thank you for your evaluation, which is most helpful.

Please circle your answers:

My pharmacy practice setting is:	Independent	Chain	Hospital	Consultant
The objectives of the lesson were achieved.	Yes	No		
The quality of presentation of the material was:	Excellent	Good	Fair	Poor
The information presented will be useful to me in my practice.	Strongly agree	Mildly agree	Mildly disagree	Strongly disagree

How long did it take you to read the material and respond to the Continuing Education questions: (Please specify the number of hours )  
 \_\_\_\_\_

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