

The EXPANDING Role of



All too many oncology centers separate pharmaceutical care from the primary oncology care provided in the clinic. In these centers, the pharmacist functions as an independent practitioner and is usually limited to the traditional role of dispensing medication. Exceptional care does not arise from independent practice, but from the shared vision and values of interdependent practice.¹ If there is little interaction with the clinic staff or patients, the pharmacist may or may not share the goals of the rest of the clinic personnel, and this lack of communication and common culture can produce less than optimal patient care.

Certainly pharmacists can offer safe and appropriate dispensing coupled with a shared responsibility for high-quality patient outcomes related to drug treatment,² but pharmacists can also perform economic assessments of drug costs and use, provide background material on specific medications and the drugs available through clinical trials, help improve the drug billing process, and participate directly in patient care. Some of these services occur behind the counter, but some take place at the patient's side. All support the clinic team's effort to care for the patient.

Drug Dispensing

Let's begin with the familiar. Any successful oncology pharmacy must have a high-quality dispensing service that incorporates aseptic drug preparation, secure drug storage, and the accurate labeling of prepared products. At Lawrence Memorial Hospital, the pharmacy staff has gone farther and added a number of programs to educate

the staff and protect the patients. After consulting with the clinic, we standardized the vial sizes of the chemotherapy drugs and dilution agents the clinic routinely uses to lower the risk of medication errors, and standardized certain infusion practices, such as the rate of drug administration. The guidelines for these programs are readily available to all the members of our clinic staff. They are used to create preprinted chemotherapy order sets and may be used in the future for computerized physician order entry.

We also developed a spreadsheet tool to further reduce the risk of chemotherapy errors. This two-page drug dosing form can be tailored to the needs of every patient and is distributed with every dose of antineoplastic medication we dispense. The spreadsheet hard copy displays the clinical information and known adverse effects of each drug, lists helpful equations, and provides dosing and administration guidelines. The patient's name, height, weight, sex, age, allergies, and serum creatinine also appear on the spreadsheet, and the computer program uses this information to calculate the patient's ideal weight, adjusted weight, body surface area, and the total dose of medication. Another part of the program calculates the number of vials required to prepare the dose, the volume of diluent that should be used to reconstitute the drug (if applicable), the volume of reconstituted drug needed for the dose, and the concentration of the reconstituted drug. If the drug needs to be further diluted prior to administration, a solution and volume can be entered. The program will then calculate the volume and concentration of the final product. Multiple safety checkpoints throughout the program warn if any entries or calculated values are outside of our guidelines. After the document is printed, it accompanies the completed medication to the nurse, who performs a final check before administering the drug to the patient. We believe the guidelines and checkpoints built into the spreadsheet decrease the risk of a disastrous medication error in our clinic.

Drug Information and Economic Assessment

A pharmacist is also a resource for drug information. We often research answers to questions about drugs from the medical and nursing staff or from patients, educate the staff about new drugs, document adverse drug reactions, prepare formulary drug reviews, and produce patient education materials.

Another area of drug information is formulary management. At our institution, the pharmacy recently completed a review of the cost of available antiemetics. This review led to changes in our clinic's standard antiemetic

the Oncology Pharmacist

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regimen that produced an annual savings of nearly \$30,000. We will review the regimen on a yearly basis and revise it as patents expire, bids change, new dosing information on existing products is published, and new medications become available.

Many pharmacists in oncology settings help their clinic staff become familiar with investigational drugs or new drug regimens being evaluated in clinical trials. These pharmacists not only identify protocols for which individual patients might be eligible, they also sit on Institutional Review Boards, produce patient education materials on experimental drugs, and manage experimental drug supplies. Some administrators believe that having pharmacists manage experimental drug supplies is too costly; but a recent study by McDonagh and colleagues³ looked at the balance sheets of two pharmacy-based investigational drug services for a year and found they had produced cost savings of \$2.7 million, mainly from decreased drug purchase costs.

Billing

For hospital-based clinics like ours that treat large numbers of Medicare patients, the era of ambulatory payment classifications (APCs) has brought frustration and confusion. Pharmacists can help eliminate much of that confusion. We can ensure that drugs are coded and billed accurately, and help develop and maintain drug administration charging systems that work. Our oncology pharmacist helped create our nursing medication administration charging system, and periodically audits the system with the nursing staff to see if drug administration charges are being coded and billed properly.

We also discovered that our reimbursement-to-charge ratio for Medicare patients was not as high as we expected. The pharmacist confirmed that the HCPCS quantities were listed correctly in the pharmacy billing system, but when we consulted our hospital's accounting department, we discovered that the hospital-wide billing system was systematically converting all the HCPCS quantities to "1" before sending the bills to our fiscal intermediary. Rectifying the problem produced an extra \$100,000 in billable drug charges.

The oncology pharmacists and the accounting department were also instrumental in solving a disagreement with our Medicare intermediary about how to bill individual injections. With the April 1, 2002, uniform reduction in pass-through payments for drugs, few clinics will be able to afford losses caused by problems with the billing system.

For those patients without adequate financial resources, our clinic pharmacist oversees supplies of drug samples and provides patients and staff with infor-

mation on the patient assistance programs offered by drug manufacturers. This service is a valuable asset for clinics that treat large numbers of indigent or working poor patients.

Pharmacists and Patient Care

As oncology pharmacists, we have direct relationships with our clinic patients. We take focused drug histories that often produce useful information. Cancer patients typically have multiple medical problems, many of which are treated with drugs that cause adverse reactions when they are combined with oncology medications. Some drugs can even decrease the effectiveness or increase the toxicity of chemotherapy. Our clinic pharmacists have provided guidance on these issues. Simple interventions such as medication calendars, individualized counseling, and carefully selected educational materials are routinely offered and keep many problems from occurring at our institution.

Patients appreciate their relationship with the clinic pharmacists. A recent patient we counseled about his fears of having an allergic reaction to chemotherapy continued to see the clinic pharmacist, always bringing a list of medications that had been changed by his other physicians. The pharmacist updated his clinic records and reviewed the medications with the patient, which allayed his anxieties and helped ensure that he adhered to his chemotherapy regimen.

Our pharmacists also work with the oncology care team to improve drug regimens. Oncology pharmacists have extensive knowledge of drug treatment schedules for a wide variety of malignancies. We make that knowledge available to the team, and use our pharmacokinetic and pharmacodynamic training to help the team monitor a patient's response to a particular drug regimen. Along with nurses and physicians, we watch lab results for information on organ function and recommend adjustments to dosing schedules that will allow the patient to receive the maximum amount of drug with the least physiological damage.

In addition, pharmacists can help physicians and nurses manage patient pain medication,⁴ antiemetic therapy,⁵ and colony-stimulating-factor dosing.⁶ When good clinical guidelines are developed for supportive therapies, patient outcomes improve and costs are reduced. With our help, the clinic is also developing a pharmacy-based, physician-supervised anticoagulation clinic that we believe will improve our continuum of care.

Your pharmacist can bring a wide range of services to your clinic. Many of these services are easily recognized, traditional functions, while others will be relatively new for many institutions. Increasing your pharmacist's involvement in the life of the oncology clinic can lower

A Prescription for Success

by Wendy Andrews

At the Arizona Cancer Center in Tucson, Ariz., we use the same care model Parker and Finkbinder have described. Our pharmacists are members of the medical team and have a hand in every decision we make at the clinic.

We involve our pharmacists in patient care for a variety of reasons. On the clinical side, pharmacists conduct an extra level of safety checks to make sure the drugs we give our patients are being administered at the correct dosage. Pharmacists also know what drugs can be compatibly combined and are storehouses of information on alternative therapies and dose adjustments when patients react badly to chemotherapy or supportive care medications. Pharmacy staff members have as big a role in ensuring our patients have a decent quality of life as the chaplains, the social workers, and the nutritionists.

Economically, our clinic would be in terrible shape without the pharmacists. In this era of ambulatory payment classifications (APCs), hospital-based programs receive the lowest drug payments of any type of oncology practice. Several significant problems have resulted, which our pharmacists help us solve. For instance, since diluents are not being reimbursed separately anymore, the pharmacists tell us which drugs (i.e., antiemetics, furosemide) can use the same diluents and which drugs can be added to the chemotherapy administration

bag without being denatured or interfering with the action of the antineoplastic agent. By administering several drugs with each diluent, we cut costs. In addition, if we can infuse several drugs at the same time, the patient doesn't have to spend the entire day hooked up to an IV and more people can be seen in the clinic.

All our staff members have a list of chemotherapy drugs plus information on the diagnoses for which each drug will receive insurance coverage. If we want to use a drug for an off-label indication that will not be reimbursed, our pharmacists help us get the drug replaced by the manufacturer.

Your pharmacy staff should be closely involved in following the clinical care guidelines distributed by the Centers for Medicare and Medicaid Services or your clinic won't stay solvent for long. For example, if growth factors will only be reimbursed when the patient's blood counts are at certain levels, everyone has to know what those numbers are or you might end up giving the drug away. If the pharmacist insists on seeing the patient's lab results before dispensing growth factors, another financial safeguard is added to your system.

As reimbursement becomes harder and harder to obtain, you will need a team of people to figure out how to cut costs without sacrificing patient care. Your pharmacist will be a critical member of that team.

Another pharmacy task is running the indigent care program. Our pharmacists ensure that people who have no insurance and no money still receive the care they need by getting them into free drug programs sponsored by pharmaceutical manufacturers.

Our pharmacists are caregivers, not just drug dispensers. Every patient that comes to our clinic sees a pharmacist face to face. Pharmacists can help patients understand what type of treatment they are receiving and have ideas about how to prevent side effects. They also help the team understand how the drugs work, why patients feel the way they do, and what kinds of reactions to watch for in the future.

Cancer is not declining in our society. People must realize that, if their pharmacist is not on the clinic team, the quality of care the institution can provide will drop drastically when the patient population increases. Since cancer therapy rests primarily on drugs, what better person could clinicians have at their side than someone who can be an equal partner in managing and prescribing these crucial substances that form the largest single expenditure any cancer care facility will make. ☐

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costs, increase the safety of drug delivery, avoid hospitalizations for drug-related problems, provide an additional revenue stream, and improve patient care. We are a resource you cannot afford to overlook. ☐

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References

¹Covey SR. Overview Section, *The 7 Habits of Highly Effective People*. New York, NY: Simon & Schuster; 1989:46-60.

²Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. *AJHP*. 1990;47(3):533-543.

³McDonagh MS, Miller SA, Naden E. Costs and savings of investigational drug services. *AJHP*. 2000;1(57):40-43.

⁴Lothian ST, Fotis MA, von Gunten CF, et al. Cancer pain management through a pharmacist-based analgesic dosing service. *AJHP*. 1999;56(11):1119-1125.

⁵Martin JK Jr, Norwood MB. Pharmacist management of antiemetic therapy under protocol in an oncology clinic. *AJHP*. 1988;45(6):1322-1328.

⁶Bernstein BJ, Blanchard LM. Economic and clinical impact of a pharmacy-based filgrastim protocol in oncology patients. *AJHP*. 1999;57(4):392.