SPECIAL FEATURE

Transitions in pharmacy practice, part 3: Effecting change—the three-ring circus

Ross W. Holland and Christine M. Nimmo

Abstract: The prerequisites for a change in practice in individual pharmacists, as framed by the Holland–Nimmo practice change model, are discussed.

The Holland–Nimmo practice change model comprises three components, all of which must be addressed by a pharmacy's leadership if a change in practice is to be achieved. The first component is the practice environ- ment, which must be condu- cive to implementation of the new form of practice. The second component is the availability of appropriate training for individual practi- tioners. The third component is an appropriate set of moti- vational strategies to be ap- plied by the manager. All three components must be present at the same time; no one or two components by themselves are sufficient.

The practice change model is equally applicable to pharma- cy department managers in health-system settings and to community pharmacy own- ers and managers.

To maximize the potential for individual pharmacists to change their practice, managers must create an environment conducive to the new form of practice, identify needed learning re- sources, and motivate practi- tioners to change.

Index terms: Administra- tion; Administrators; Educa- tion, pharmaceutical; Models; Motivation; Pharmacists, community; Pharmacists, in- stitutional; Pharmacy, com- munity; Pharmacy, institutional
Am J Health-Syst Pharm. 1999; 56:2235-41

I n previous articles in the "Transitions in Pharmacy Practice" series, we observed that pharmacy, if it is to survive as an active participant in emerging health care systems, must change along with the rest of health care. We proposed a model of total pharmacy care that incorporates not only established practice models but also the developing concepts of self-care and pharmaceutical care. We noted that different skills and competencies will be required of pharmacists as they move from one type of practice to another or add a new type of practice to their repertoire. The shift in mindset required if practitioners are to enter the newer, patient-oriented areas of practice was discussed. The requisite elements of knowledge, skills, and attitudes were clearly delineated and differentiated in "Transi- tions in Pharmacy Practice, Part 2: Who Does What and Why."[1]

Given the current rate of change, the profession must be proactive rather than reactive. If practitioners are to change their practices to match the new order of things at a tempo matching the reorganization of health care delivery, strategies to encourage and accel- erate such change are needed. The questions to be answered are "How do we facilitate practice change in individual practitioners?" and "How do we bring prac- titioners to the point of decision to change?"

The focus of efforts to encourage practice change should be the individual pharmacist, because the deci- sion to change ultimately rests with the individual practitioner, not the organization or the profession. The direct facilitator of practice change, then, becomes the health-system pharmacy department manager or the community pharmacy owner or manager, who, acting in a leadership role, ensures that his or her vision for change is realized. Since it is leadership at this level that marks the make-or-break point of practice change, our model for facilitating change addresses the needs of this audience, namely, pharmacy department manag- ers and community pharmacy owners and managers.

This article (1) identifies, examines, and interrelates the three prerequisites of a change in practice in indi- vidual pharmacists and (2) discusses leadership strate-

---

Ross W. Holland, Ph.D., Ed.D., M.A., FPS, FSHP, FASCP, FAIPM, MACPP, is Dean, Australian College of Pharmacy Practice, Canberra, Australia. Christine M. Nimmo, Ph.D., is Director, Edu- cational Resources, American Society of Health-System Pharma- cists, Bethesda, MD.

The "Transitions in Pharmacy Practice" series proposes a model for helping pharmacy department directors and their staff developers facilitate changes in practice by staff members. The model was conceived in response to continuing reports of widespread failure to persuade practitioners to fill more roles in clinical pharmacy and pharmaceutical care, despite supervisors' attention to traditional managerial theory about motivation for workplace change. The first few articles in the five-part series build an appreciation for how the complexity and diversity of the current pharmacy environment demand an innovative approach to practice change. Subsequent articles present the model for change and detail a theory-based approach to the component least understood by department directors and staff developers: motivation. The articles are intended to be read in the order published. The series started with the article in the September 1 issue and continues monthly, in the first issue of the month, to January 1, 2000.

gies needed to satisfy the three prerequisites. Although the model is appropriate for use by opinion leaders at national and state levels and by providers of continuing professional education (CPE), we will focus our attention on the model's use at individual pharmacy worksites. Because the model is applicable to both health-system practice and community practice, examples will be drawn from both areas.

The Holland–Nimmo practice change model

We present the Holland–Nimmo practice change model as an analytical tool and a framework for action that is ready for trial. Both of us work at the national level in our respective countries (Australia and the United States) designing and implementing CPE with the goal of facilitating practice change. Our frequent frustration with the failure to adopt changes in practice—even when we knew our continuing-education programs to be of high quality—led to intense examination of why results have been so mixed.

We combined our national perspectives on the big picture of professional change in pharmacy; research on change, psychology, and education; and the insights of managers and practitioners who worked with our CPE programs and encountered barriers to change. The resulting Holland–Nimmo practice change model is intuitive and may look to most like common sense. The model proposes that, regardless of the nature of a proposed change in practice, there are three sets of conditions that must be simultaneously satisfied before the change is likely to be implemented. If any of the conditions is not met or is not met simultaneously with the others, it is predicted that the process of achieving change will falter.

The model addresses all types and degrees of practice change and is not limited to use by those who seek to implement clinical pharmacy or pharmaceutical care services. In the "Transitions" series the model is pre-

sented as three interrelated components, with component-specific questions managers must resolve. The last article in the series presents a detailed explanation of strategies for fulfilling the third component, motivational strategies. Current research is examining the value of using the model as a tool for devising strategies to address barriers to change uncovered by analysis.

Figure 1 illustrates the relationship among the three components of the practice change model: practice environment, learning resources, and motivational strategies. With respect to the first component, practitioners are unlikely to follow through on a commitment to change their practice unless they are in a practice environment in which they can use the new practice model. Regarding the second component, there must be accessible and effective resources available to provide the opportunity to learn any required new knowledge and skills. Finally, the practitioner must be sufficiently motivated to take whatever steps are required to effect the change in practice.

Campagna and Newlin[2] cited eight factors that influence pharmacists' decisions on drug therapy: attitudes, economic structure, expertise, laws and regulations, motivation, personality, practice setting, and public expectations. All of these factors are taken into account by the three components of the Holland–Nimmo practice change model.

In discussing this model and applying it to the individual workplace, we are making a number of assumptions. One is that a decision has been made to change pharmaceutical services, necessitating alteration of individual pharmacists' practice. We also assume that there is a clear description and delineation of the new practice, regardless of its degree of difference from the current way. The change may be a simple shift of practice within an existing role, a more extensive change from an existing role to a different but currently available role (e.g., from a distributive role to a drug information role), or a major change, such as from drug information to clinical pharmacy or to the newer, more patient-oriented roles of self-care and pharmaceutical care.

To demonstrate the model's universality under dif-

Figure 1. Relationship of the three basic components of the Holland–Nimmo practice change model.
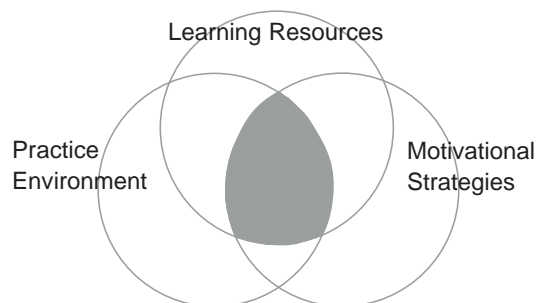
ferent conditions and circumstances, we will discuss each of the three components separately by exploring their relevance and applicability in two scenarios. We will then show how the elements interact with each other, emphasizing the necessity for all three to be in play at the same time.

Scenarios

Scenario 1. Marcia Green is the pharmacy department manager in a 150-bed not-for-profit community hospital. The pharmacy department was downsized five years ago, but it is now stable and comprises the manager, 7 staff pharmacists, and 10 technicians. One of the pharmacists, Ben, has a clinical background and interests, has been on the staff for eight years, and does all the clinical pharmacy work in the hospital. While the pharmacy is open to carry out distributive functions 24 hours a day, clinical services are limited to consultations on total parenteral nutrition (TPN) and aminoglycoside and vancomycin pharmacokinetics.

The pharmacy currently has automated distribution technology in the labor and delivery suite and in the emergency room. Marcia is interested in exploring other applications of this technology in order to free pharmacists for clinical roles. She has a short- to medium-term vision in which the department will greatly increase its impact on the quality of patient care. Within the next two years, she wants to initiate action and implement change by extending the pharmacy's services. The following changes are planned: (1) all pharmacists will perform needed pharmacokinetic and TPN consultations, (2) every order the pharmacy fills will include a review of the patient's renal function, with dosage adjustments recommended as needed, and (3) all antimicrobial orders will be assessed for appropriateness. All these services will be provided in accordance with protocols established by the pharmacy and therapeutics committee.

Scenario 2. Tim Jones is the owner of a small group of community pharmacies comprising six stores that are open 14 hours a day, seven days a week. He is acutely aware that both his turnover and profitability are declining because of low margins on prescriptions being paid by area HMOs and aggressive front-of-shop pricing policies of the larger chain drugstores nearby. Tim is motivated by the need for economic survival. Having noted the literature promoting the virtues of pharmaceutical care, Tim has been impressed by the potential for increased profits that may be generated by this new type of service. He decides to approach the major third-party payer in his area. The payer is convinced by the pharmacoeconomic data that Tim presents in support of his argument and agrees to a 12-month trial of a fee-for-service arrangement for pharmaceutical care interventions provided by Tim's pharmacies for a limited range of specific diseases in which the HMO sees a potential for savings.

Tim is determined to make the trial work. He has been developing a plan in collaboration with his pharmacist managers. They have identified which diseases are most appropriate for management at their own sites, and they are enthusiastic and willing to try the plan. However, their problem is that this new service, which must be provided in addition to their existing functions, represents a big change in practice. Currently, their pharmacies employ a total of 25 pharmacists whose main role is to dispense prescriptions—sometimes, but not always, aided by a pharmacy technician. The pharmacists, with an average age of 45 years, all have B.S. degrees. Busy with their distributive tasks, the staff pharmacists rarely speak directly to their clients.

Now let us consider each of the elements of the practice change model, using the two scenarios to demonstrate their applicability.

Practice environment

The first element of the practice change model proposes that there must be an environment in which there is an opportunity for the practitioner to engage in the new practice activities. It is implicit in all models of change that one must account for the environment or system in which the change is to take place, whether the arena is social,[3] educational,[4,5] organizational,[6] or health care.[7] With respect to the health care arena, Rotem[8] stated that, if we are to understand and influence practice patterns, we must consider the roles of people—both care providers and receivers—and the systems within which health care is provided. This is equally true of the health system as a whole and of subsystems, such as the pharmacy department or community pharmacy. Creating this environment in which new activities can occur is a function of multilevel leadership activity culminating in a job description that specifies the desired practice as the pharmacist's role. This component comprises activities at three levels: society, health system, and individual practice site. All these activities influence the ability to change practice.

The process for creating the opportunity to practice is hierarchical: The resolution of societal issues must precede the organization of the health system's services, and health-system structure must be in place before the immediate practice environment can be addressed. Normally the individual manager will be concerned only with the latter level. The manager's activities for creating the optimal environment are the focus of the discussion here, but a brief discussion of prerequisites will preface that discussion to put the manager's role into context. Societal and health-system issues include concerns about access and equity, payment, legal considerations, relationships with other health care providers, and consumer expectations. Resolution of societal and health-system environmental leadership issues dictates what is or is not possible at the practice level. In

the main, but not exclusively, these are leadership issues addressed by professional organizations.

What of leadership activities at the practice-environment level? We contend that, without follow-through to establish an environment conducive to implementation of the planned changes at the practice site, there is little prospect for change. Because such environments do not usually happen by accident, the manager must plan, implement, and then nurture environmental changes to ensure their success. The site environment that permits a change in practice will meet many criteria, including the following:

- The site's health care practitioners (e.g., physicians, nurses, nutritionists) who share involvement in relevant areas of care welcome the extended pharmaceutical services to be provided.
- If a new service is involved, it has been formally established, and necessary resources have been acquired before implementation.
- Position descriptions have been rewritten to reflect the pharmacists' new roles.
- Jobs have been re-engineered, if necessary, to give pharmacists time to undertake new professional responsibilities.

Let us consider how Marcia in her hospital pharmacy department and Tim in his group of community pharmacies will meet the environmental expectations. Each is conversant with the new services they intend to introduce and have rewritten their staffs' job descriptions to meet these expectations.

Tim, as an owner, is fully in control of the environment in which his staff practices. Yet, before he begins, he must ensure that his plans match societal and health-system needs and expectations, that the services will be acceptable within his medical community, and that they can be "sold" to his public.

How will he address the creation of a suitable practice environment? Tim has to consider the deployment of resources required to introduce disease-specific pharmaceutical care at each of his six sites. Primarily, this will be accomplished by creating time to undertake the new tasks and providing the means to carry them out. Tim must be willing to allocate funding to site re-engineering and additional support staff. He must also provide physical equipment, such as extra computer terminals, filing cabinets and appointment cards, additional patient education material, and a larger inventory of patient aids, as appropriate to the particular type of practice being introduced at each site. In short, he has to give his staff the time and support necessary to implement the new services, while keeping an eye on the expected return on investment.

Marcia's position is a little different as she approaches the creation of a practice environment that will enable practice to take place in the new way. First, she has reviewed her plan for new services to be certain that they are not in conflict with society's needs and expectations or the overall requirements of her health system. Her subsequent efforts must satisfy two audiences, health-system administrators and health care providers for whom the extended services will be provided.

To satisfy administration, she must show that the changes she proposes will result in improved patient care while remaining cost neutral. The role provided by Ben in the provision of high-quality, if limited, services over the past eight years has been acknowledged by hospital administration as contributing to quality services. In addition, Marcia has made a credible case that cost savings would result from introducing more robotic dispensing, which would in turn allow redeployment of staff to more clinical duties. Thus, her plan for changing service mix has been accepted by higher management.

While Marcia believes that increased clinical pharmacy services will be welcomed by the medical staff, she must verify this assumption and seek acceptance of the proposed services from the medical and nursing staffs. In addition, she must provide the physical resources—equipment and facilities, in this case—to complete the physical aspects of an environment friendly to the provision of clinical services. Finally, she must rewrite job descriptions to make clear her job-performance expectations. She uses the Pharmacy Practice Competency Checklist with Criteria[9] as a source for accurately describing the new practice tasks in the job descriptions.

Unless they intend to replace existing staff with pharmacists who better meet their new needs, both Tim and Marcia must also consider an investment in training to give the current staff pharmacists the required new knowledge and skills. The exact nature and features of that educational resource requirement are considered the next component of the model. Detailed job descriptions provide the basis for identifying any needed professional development.

Learning resources

The second component of the practice change model is the learning resources that enable knowledge and skills specific to the new practice to be acquired. Just as the environment must be tailored to the specific practice and site, learning resources must meet the needs of individual pharmacists to successfully pave the way to the new practice.[10]

At this point, both Marcia and Tim must consider the training necessary and must ensure that any required learning resources are available and accessible. This is a sequential process (Figure 2).

Materials and programs. The manager must begin by systematically comparing each task required of practitioners in the revised job descriptions against an accurate assessment of the practitioners' current knowledge, skills, and attitudes. This analysis will generate a list of training needs.[11] Instruction that matches the practitioners' needs must either already exist or be created. The existence of matching training that will

Figure 2. Learning resources required for the Holland–Nimmo practice change model. The arrows indicate the direction of this sequential process.
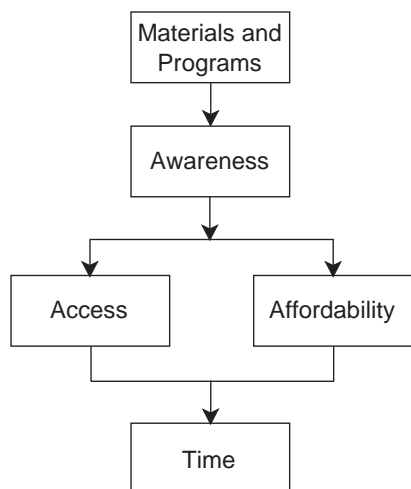
result in competent performance of the new practice tasks is the prime requirement.[12] This suggests that CPE providers need to be in close contact with managers in order to identify practice changes being attempted and the commonly associated learning needs of changing practitioners.

Awareness. Next, Tim, Marcia, and their changing practitioners must all be aware that the needed learning resources exist. This suggests that those who develop learning resources for CPE must actively and effectively promote comprehensive information on content and presentation format.

Access and affordability. Existence and awareness of learning resources are not sufficient to meet the requirements of the learning resources component unless these resources are readily accessible and affordable. New learning cannot be effected if training is not available when needed or is geographically inaccessible, or if the cost is beyond the payer's reach.

Time. Finally, when all the other conditions are met, pharmacists must have the time to use learning resources to acquire the required new knowledge and skills.

How does this fit our two scenarios? Let us take the hospital pharmacists first. In their current role, they are very aware, through constant handling of all the pharmaceutical products in the formulary, of which sections of the hospital the medications are used in, and they are conversant with normal dosage ranges for each. They have experience in detailed record keeping and quality control of the process for a distributive role—all the attributes listed in "Transitions in Pharmacy Practice, Part 2: Who Does What and Why."[1] What are they being asked to do instead? All pharmacists must provide pharmacokinetic and TPN consultations, gauge patients' renal function and adjust drug dosages

when necessary, and assess all antimicrobial drug orders for appropriateness. Even though there are established protocols for these new functions, the skills required for implementing the protocols are different, as are the responsibilities associated with these activities. At least in part, pharmacists' functions will change from distribution to clinical pharmacy.

Marcia will need to locate training that develops content and procedural knowledge relevant to the new practice responsibilities. There must also be instruction on the use of protocols and accuracy in calculations and assessments. Any instruction must also provide sufficient practice to ensure the confidence of pharmacists in their new abilities.

What about the community-based pharmacists, who are also currently functioning in a distributive mode? They are being asked to undertake pharmaceutical care, to change from a product orientation to a patient orientation. Not only will they have to build patient information bases and review them for problems, they will also have to develop therapeutic care plans and monitor outcomes. This will require something they have rarely done before: dealing regularly with patients on a face-to-face basis. Most of these pharmacists will need to learn more about therapeutics and how to develop and work with pharmacy-specific, patient-oriented outcome indicators. They will also have to improve their communication skills for working with patients.

Resources available to facilitate practice change. What, then, are the educational and training resources available to pharmacists? In the United States they run the gamut. There are nontraditional Pharm.D. programs; various clinical skills programs, including those conducted by the American College of Clinical Pharmacy, the American Society of Health-System Pharmacists, the American Pharmaceutical Association, the National Community Pharmacists Association, and the American Society of Consultant Pharmacists; and certificate courses. Also often available are less formal resources, such as workshops at the national, state, and local levels; self-study programs; and onsite staff development programs.

These training sources vary widely in content, quality, and delivery method. Some are broad in focus, some narrow. Presentation format ranges from live instruction to self-study via hard copy, computer-assisted learning, or the Internet. Time scales vary from a matter of hours to a weekend school to a four-year, part-time program. The critical need is to evaluate any instruction to see if it meets the requirements of the individual learner.

Although one should not become complacent, and there will always be a place for additional educational resources, professional organizations and educational institutions can claim to have been diligent in providing for this element of the practice change model. If there is a fault in the current system, it is perhaps that

not enough pharmacists know the scope of these resources.

This brings us to the critical elements of affordability and time. Tim and Marcia must decide who is to pay; if paid study time is to be allowed and, if so, under what conditions; and whether to arrange for onsite or offsite training. Tim wants quick results and decides that, for his group, inhouse training will be most cost-effective. In addition, one of the younger pharmacists decides to enter a nontraditional Pharm.D. program at his own expense to advance his job prospects. Marcia identifies a number of weekend training courses to use over her two-year implementation time frame.

Motivational strategies

The practice change model's third prerequisite for implementing change in practice is motivation. The individual practitioner must, by one means or another, be motivated to choose to change; if not, nothing happens. Motivation is a complex subject. It involves internalized attitudes and values and is influenced greatly by personality. Incentives and rewards recognizing both logical and emotional needs can be involved.[13-16]

While the profession has paid attention to doing something about the first two components of the model, only a few investigators have considered the impact of motivation on practice change in pharmacy. Odedina and Segal,[17] in describing their behavioral pharmaceutical care scale and in analyzing pharmacists' implementation of pharmaceutical care factors,[18] proposed behavioral intention as the direct determinant of a pharmacist's behavior. They suggested that motivation toward a "decision to try" is a prerequisite for attempting pharmaceutical care.

Campagna and Newlin[2] identified motivation as a key factor in influencing pharmacists' drug therapy decision-making. McDonough et al.,[19] in their work with the Iowa Center for Pharmaceutical Care, found that designing a training program that would work for all practitioners was difficult because of "variations in individual characteristics that influence motivation." Berger and Grimley[20] applied the Prochaska and DiClemente transtheoretical model of change[21] to describe pharmacists' readiness for change, concluding there was a need to develop strategies to move pharmacists to the point of action. Trained in physical and clinical sciences, pharmacist managers appear ill-equipped with the behavioral change methods required to motivate individual pharmacists to alter practice modes.

Managers wishing to influence their staff must account for the mindset of each practitioner and apply a systematic motivational process that will maximize the possibility of a decision to change. Full discussion of this process—an answer to Berger and Grimley's challenge—takes place in the final two papers of the "Transitions" series.

Marcia Green, the hospital pharmacy manager, has a plan for change, but can she convince her pharmacists to accept this challenge and move into a more clinically oriented practice?

Tim Jones and his managers are enthusiastic about introducing pharmaceutical care into all six community practice sites. Pharmaceutical care holds the promise of a better, more profitable future for their business enterprise—and a future that they all believe is the only road to the prosperity of the profession. But what about their 25 staff pharmacists, who must make an enormous shift in both mindset and practice to make it work? Are they already motivated to change their practices? If not, can they be motivated? Who will try to motivate them? Probably only the last question can be answered with any degree of certainty. It is Marcia and Tim and his managers who must motivate their staffs.

The three-ring circus

Practice environment, learning resources, and motivational strategies: These are the three components of the Holland–Nimmo practice change model. Each may be accurately represented by an on–off switch. A person is motivated or not. The learning resources are available or not. A practice environment conducive to new practice either exists or does not. In addition, we contend that no single component or combination of any two components is sufficient to bring about a decision to change practice and make it happen. All three elements must be functioning at the same time, like the rings in a three-ring circus.

Consider some examples. The manager of pharmaceutical services for a large HMO trains all his pharmacists to provide clinical services. The medical staff does not yet buy into an expanded pharmacy role, so skills languish and fade out of lack of opportunity to practice. The manager of a rural community pharmacy with one staff pharmacist wants that pharmacist to provide a diabetes management service. The pharmacist would like to provide this service. The only available complete training would require that the pharmacist attend a two-week residential program. The owner does not believe she can justify the cost of such training or the cost of a substitute pharmacist. The change will not occur.

Marcia and Tim are prepared to provide an appropriate work environment and pay for training. But unless they can motivate their staffs to accept the new roles demanded of them, and unless the individual pharmacists can be motivated by Marcia and Tim to make a decision to change, the chances of success in either venture are negligible. Integration of the three components is the key.

Conclusion

To maximize the potential for individual pharmacists to change their practice, managers must concurrently fulfill three leadership responsibilities: creation

of an environment conducive to the new form of practice, identification of learning resources to enable necessary knowledge and skills to be acquired, and motivation of individual practitioners to change.

References

1. Holland RW, Nimmo CM. Transitions in pharmacy practice, part 2: who does what and why. *Am J Health-Syst Pharm.* 1999; 56:1981-7.
2. Campagna KD, Newlin MH. Key factors influencing pharmacists' drug therapy decisions. *Am J Health-Syst Pharm.* 1997; 54:1307-13.
3. Lindquist J. Strategies for change. Berkeley, CA: Pacific Soundings; 1978.
4. Coombs FS. Who participates in educational change—and how? In: King E, ed. Re-organizing education. Beverly Hills, CA: Sage; 1977.
5. Havelock RG. The change agent's guide to innovation in education. Englewood Cliffs, NJ: Educational Technology; 1971.
6. Dunphy DC. Organizational change by choice. Sydney, Australia: McGraw-Hill; 1981.
7. Rotem A. Enhancing professional practice through action learning. Report on the WHO/UNDP mission in Western Pacific. Sydney, Australia: University of New South Wales; 1988.
8. Rotem A. Managing systems for better health. Western Pacific education in action series. Manila, Philippines: World Health Organization; 1988.
9. Nimmo CM, Ray M, Taylor JT. Identifying essential work-related skills. In: Nimmo CM, Guerrero R, Greene SA et al., eds. Staff development for pharmacy practice. Bethesda, MD: American Society of Health-System Pharmacists; in press.
10. Walsh PL. Planning and developing programs systematically. In: Green JS, Grosswald ES, Walthall DB III, eds. Continuing education for the health professions. San Francisco, CA: Jossey-Bass; 1984.
11. Nimmo CM. Assessing the need for training. In: Nimmo CM, Guerrero R, Greene SA et al., eds. Staff development for pharmacy practice. Bethesda, MD: American Society of Health-System Pharmacists; in press.
12. Cavanaugh SH. Connecting education and practice. In: Curry L, Wergin JF, eds. Educating professionals. San Francisco: Jossey-Bass; 1993.
13. Koestner R, McClelland DC. Perspectives on competence motivation. In: Pervin LA, ed. Handbook of personality theory and research. New York: Guilford; 1990:527-48.
14. Locke EA, Latham GP. Goal setting theory. In: O'Neil HF Jr, Drillings M, eds. Motivation theory and research. Hillsdale, NJ: Erlbaum; 1994:13-29.
15. Martin BL, Briggs LJ. The affective and cognitive domains: integration for instruction and research. Englewood Cliffs, NJ: Educational Technology; 1986.
16. Maddi SR. Personality theories: a comparative analysis. 6th ed. Pacific Grove, CA: Brooks/Cole; 1996.
17. Odedina PT, Segal RS. Behavioral pharmaceutical care scale for measuring pharmacists' activities. *Am J Health-Syst Pharm.* 1996; 53:855-65.
18. Odedina PT, Segal RS, Hepler CD et al. Changing pharmacists' practice pattern: pharmacists' implementation of pharmaceutical care factors. *J Soc Adm Pharm.* 1996; 13(2):74-88.
19. McDonough RP, Rovers JP, Currie JD et al. Obstacles to the implementation of pharmaceutical care in the community setting. *J Am Pharm Assoc.* 1998; 38:87-95.
20. Berger BA, Grimley DA. Pharmacists' readiness for rendering pharmaceutical care. *J Am Pharm Assoc.* 1997; NS37:535-42.
21. Prochaska JO, DiClemente CC. The transtheoretical approach: crossing traditional boundaries of therapy. Homewood, IL: Dow Jones-Irwin; 1984.