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A Vision of Pharmacy's Future Roles, Responsibilities, and Manpower Needs in the United States

American College of Clinical Pharmacy

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Executive Summary

Purpose

This White Paper examines the pharmacy profession's future. It discusses pharmacy's changing philosophy of practice, factors influencing the evolution of professional roles and responsibilities, preparation for future roles, future leadership and management needs, workforce manpower projections, and qualifications for practice. The paper projects a vision for this future and provides recommendations to the profession and to the American College of

Preparing for Future Pharmacist Roles

A number of steps should be considered as pharmacy prepares to shift toward a profession-wide, patient-centered practice model. More effective collaboration between pharmacy educators and the profession will be necessary to improve experiential education, develop new patient-centered practice models, and increase student professionalization. Pharmacy practice systems must be revised to support a level of patient care that genuinely impacts health outcomes. The time has come to accept the proven health care benefits of pharmacists' clinical activities and move forward to confidently promote these patient care roles to patients, payers, health care system administrators, and politicians. A broad-based, inclusive planning process involving all pharmacy organizations and associations will be necessary to address the profession's vast retraining needs. In this regard, pharmacy faculty and clinical practitioners must make the commitment to provide the expertise and cooperation necessary to develop efficacious education and training programs that can enhance the clinical practice abilities of community pharmacists. There is a need for community and institutional pharmacy leaders and managers to commit themselves to pharmacy's patient-centered philosophy of practice as they address the challenges associated with establishing new patient care roles. Increasing the recruitment and utilization of well-trained pharmacy technicians to carry out appropriate dispensing functions under pharmacist supervision will be critical to the successful development of new pharmacist practice roles. Clinical pharmacy would benefit from increased involvement in political advocacy at the state and national levels; this might be accomplished best by working synergistically with those national pharmacy organizations and associations that have well-established political links to important decision-makers. Pharmacy educators can strengthen their efforts to develop students' abilities to collaborate with other health care professionals, function in a team environment, and supervise technical personnel. Continued expansion of residency programs in all sectors of practice will be necessary to meet future needs for clinically trained pharmacists. Flexible and innovative approaches to residency training may provide practical and cost-effective mechanisms for some experienced baccalaureate-educated pharmacists who seek retraining. Schools and colleges of pharmacy have done a good job in effecting broad-based curricular revision but have not yet focused on optimizing the integration of general and professional education to better prepare patient-centered pharmacists.

Providing Necessary Leadership and Management for the Future

The future health care environment may hold many opportunities for pharmacists if the leadership and management of the profession can respond quickly to focus the profession's efforts on improving patients' drug therapy outcomes. The role of future pharmacy leaders will be to establish innovative working environments by projecting a unifying vision for the profession and providing mentoring to pharmacy managers and staff. *All* pharmacists must become agents of change. Pharmacy managers who have assembled successful pharmacy teams will be better able to produce data that justify current and future pharmacist roles. All future pharmacists will require greater leadership and management abilities.

Forecasting Manpower Needs

Future demand for pharmacists remains an unresolved issue for the profession. Both future surpluses and shortages of pharmacists have been predicted. Once technology, new centralized dispensing systems, and technicians are widely utilized to increase drug distribution efficiencies, it is likely that the need for pharmacists engaged solely in distribution will decrease. Thereafter, future manpower needs no doubt will be affected by the profession's success in redefining and transforming itself into a discipline that provides care and impacts patient outcomes. If a majority of pharmacists become involved in collaborative drug therapy (both patient-specific and population-based), disease management, and other evolving areas of practice, then manpower demands likely will increase. If pharmacists' professional roles remain unchanged, manpower requirements will be determined primarily by cost-driven changes in drug distribution management. These changes eventually could produce an environment that requires fewer pharmacists to support the future health care system successfully. To address academic pharmacy's manpower problem, there is a need for the academy to recruit new graduates into

recommendations for ACCP and its membership. The recommendations reflect the analyses, forecasts, assessments, and opinions offered in the body of the paper.

Recommendations for the Pharmacy Profession

1. Adopt a unifying philosophy of practice that establishes the patient as the primary beneficiary of the profession, with the pharmacist accepting shared responsibility with other health care professionals for patient care.
2. Capitalizing on the collective strengths of national pharmacy organizations, develop a coordinated strategy to secure financial compensation for pharmacists' patient care services that are not directly related to drug distribution.
3. Create a profession-wide strategy for both the development and use of technology. This strategy should engage pharmacy education and all venues of pharmacy practice to enhance pharmacists' training in, and use of, technology in prescription processing and distribution, drug information, and drug therapy management.
4. Work with professional regulators and state legislators to revise pharmacy practice acts to enable shared responsibility for direct patient care, use of appropriate technology and technical support personnel, and collaborative drug therapy management.
5. Develop credible, coordinated certification and credentialing processes whereby all qualified pharmacists can demonstrate patient care competence.
6. In academia, focus not only on manpower, but also (perhaps even more) on professional empowerment. Pharmacy educators must maintain high expectations for performance of both general and professional educational outcomes; contribute to the development of new post-licensure education and training programs that help existing practitioners "retool"; promote continued expansion of residency programs, including nontraditional programs (mini-

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Introduction and Purpose

… the great need is to look at pharmacy from the point of view of the patient—that is, unless we come up with something which deals with people, not pharmacists, not research laboratories, not physicians, not nurses, not drug store proprietors, not the system, et cetera, we really have not added much…"

Millis, summarizing the first day of the Millis Commission's deliberations in September, 1973[1]

It's deja vu all over again!

Yogi Berra, circa 1960[2]

As these quotations suggest, the issues currently confronting the pharmacy profession are not new. Despite a vivid realization that it must redefine itself as a patient-centered profession, pharmacy's longstanding focus on product has continued throughout the last quarter of the 20th century. However, it is apparent that the changes in United States health care delivery, financing, education, and management systems that transpired during the 1990s have now finally set the stage for meaningful transformation of the profession. This paper presents a vision for the future in an attempt to facilitate that transformation.

In the fall of 1997, ACCP President Jerry

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been optional for many segments of pharmacy, the unfolding economic and political health care environment of the 21st century has positioned the entire profession at a crossroads. Previous published exhortations notwithstanding,[5–7] the time has come for concerted, unified action by all stakeholders. It is in this context that the White Paper's observations, analyses, and recommendations have been developed.

Toward a Unified Philosophy of Practice

The pharmacist has lost his professional standing primarily because the patient cannot visualize him as a tradesman and a professional simultaneously.

The Dichter Report, 1973[8]

The most truthful thing I can say about pharmacy practice is this: it is an occupation psychically bound to the act of providing medications to patients, but which knows that it must find a new reason for being.

Zellmer, 1996[9]

Thus, we see today a major proportion of pharmacists in both community and health-system settings who perform solely or primarily distributive functions, the uneven adoption since the 1970s of clinical tasks, and much talk about, but scant performance of, pharmaceutical care functions by either health-system or community pharmacists.

Holland and Nimmo, 1999[10]

Throughout its modern history, pharmacy has struggled to balance the profession's seemingly dual mercantile and professional missions. The Dichter report, commissioned by the American Pharmaceutical Association (APhA) in 1972 to analyze consumers' perceptions of pharmacists, noted that this model of merchant-professional was in agreement with no other profession's credo and therefore was potentially dysfunctional.[8] Pharmacy is the only health care profession that is reimbursed primarily through sale of a product rather than for provision of patient-specific service.[11] The profession's movement toward patient-centered practice in the 1960s, 1970s, and 1980s resulted in promulgation of the principles of clinical pharmacy practice, drug information services, and eventually, pharmaceutical care.[12] In the early 1990s, the provision of pharmaceutical care was endorsed broadly by the profession, including pharmacy educators, as its new professional mission.[13] However, continued high demand for product-oriented practitioners, combined with the absence of viable reimbursement systems for nondistributive patient care services, made the implementation of patient-centered practice impractical for the profession as a whole…*until now*.

Today, it is apparent that technology-driven, cost-effective systems for managing the drug distribution process are a reality, and these systems will be refined and widely implemented in the near future.[5] Technical support personnel

pharmaceutical care practice model, and (5) the distributive practice model.[18] These authors also point out that pharmacy's transition to a new patient-centered role "will not be instantaneous but will continue for an indefinite period to include a shifting balance of the five practice models."[20] The 1999 White Paper from the National Association of Chain Drugstores (NACDS), APhA, and the National Community Pharmacists Association (NCPA) echoes this view: "While some say that the pharmacist's role has been 'redefined' from medication dispenser to patient care provider, it is more accurate to say the role has been *expanded*."[14] Hence, it appears that the transformation of pharmacy from a product-oriented to a patient-oriented profession should necessitate the coexistence of several concurrent practice models during this period of transition. Nonetheless, we believe that this evolutionary process probably will result eventually in the emergence of a single practice model, although one that may be actualized differently within a variety of settings.

Given this likelihood, there is clearly no purpose in continuing to debate the terminology that should be properly applied to this evolving patient-oriented practice while we still find ourselves in a transitional period. Be it "clinical pharmacy," "pharmaceutical care," "disease state management," "total pharmacy care," or any of the myriad of other descriptors, what remain most important are the purpose and end result of pharmacy's professional activities. Weaver and colleagues captured this idea well in a recent review by stating, "…clinical pharmacy was a means, rather than the end, to achieve the professional shift that was needed."[22] And, unfortunately, many members of the profession involved in the clinical pharmacy and pharmaceutical care movements have failed to appreciate this seminal principle—it is not really about *what* we do, but rather, about *why* we do it.

Based on the foregoing, we propose that the profession's leading organizations and trade associations come together to redefine, and reach consensus on, a unifying philosophy of practice for the pharmacy profession. Cipolle, Strand, and Morley[23] offer the following characterization of practice philosophy:

> A philosophy of practice is a set of values that guides behaviors associated with certain acts. …A philosophy defines the rules, roles, relationships, and responsibilities of the practitioner. Any philosophy of practice that is to be taken seriously must reflect the functions and activities of the practitioner—both esoteric and common, appropriate and questionable—and also critically provide direction toward the formation of a consistent practice. How a practitioner practices from day to day should reflect a philosophy of practice. A philosophy of practice helps a practitioner make decisions, determine what is important, and set priorities over the course of the day. Ethical dilemmas, management issues, and clinical judgements are all resolved with the assistance of a practitioner's philosophy of practice. This is why the philosophy of practice must be well understood and clearly articulated, so it is explicit and relied on in the face of difficult problems.

In our estimation, the pharmacy profession has no such consensus philosophy of practice. Although pharmaceutical care was adopted by the profession as pharmacy's practice mission, the philosophy behind this practice has not been embraced by the profession as a whole. Common misconceptions exist among practitioners, including the all-too-often-heard proclamation that "*all* pharmacists practice pharmaceutical care." Obviously, as noted by Holland and Nimmo, this is not the case. Data recently gathered by Arthur Andersen, LLP, for NACDS indicate that community chain pharmacists are spending more than two-thirds (68%) of their time engaged in processing orders and prescriptions, managing inventory, and performing administrative activities.[24] This study found that only 2% of community chain pharmacists' time was devoted to activities involving disease management. Sleath and Campbell observe that "the profession has a long way to go in its efforts to convince the public (or itself) that the patient rather than the drug product is the social object of the profession."[17]

It is noteworthy that the NACDS-APhA-NCPA White Paper on implementing change in community pharmacy *practice* [emphasis is ours] never employs the term "pharmaceutical care," opting instead to use the terms "patient care," "direct patient care," and "patient care services." Nonetheless, the NACDS-APhA-NCPA White Paper supports the vision of patient-oriented practice, indicating that the "concept of the pharmacist as a patient care provider is gaining acceptance in the health care community."[14] The White Paper emphasizes the continued dual role of pharmacists as managers of both dispensing and patient care, and suggests that if pharmacy is to succeed in this capacity, the profession must

become united by establishing common goals that meet public need. We agree.

Whereas adoption of the pharmaceutical care mission was a laudable step for pharmacy, this alone has not transformed professional practice. Ironically, the tenet of pharmaceutical care may be experiencing significant erosion due to its implementation because this implementation has been inconsistent. When most practicing pharmacists are unable to achieve the mission set forth for pharmacy as a whole, one must question the profession's credibility. Despite the fact that meaningful, patient-centered care that impacts patient outcomes is performed by pharmacists in a variety of settings today, we still fall short of implementing this practice model to the full benefit of society. Indeed, to the majority of consumers, pharmaceutical care is at best imperceptible, and at worst nonexistent.[23] This is particularly significant in the community hospital and community pharmacy sectors where pressures of manpower shortages, inadequate technological resources and support personnel, diminished financial support due to managed care policies and inefficient third party benefit designs, and the mismatch between practice regulations and needed practice empowerment have made the implementation of pharmaceutical care impractical.[14] The landmark Millis Commission Report, perhaps the most holistic and comprehensive study of pharmacy to date, implored the profession to redefine itself to improve patient care, "Eventually, perhaps the definition will describe the practice of the vast majority of pharmacists who should be deeply involved with people and their health as they are met through drugs."[25] But try as we might, it will not be possible to meet society's drug therapy needs without engaging all sectors of the profession and mounting the support necessary to involve the "vast majority" of pharmacists, as the Commission suggested. At present, most pharmacists not only are prevented from rendering pharmaceutical care, but have adopted a jaundiced view of the profession's ability to achieve this vision. We no longer can accept the mismatch between what we espouse and what we are able to accomplish.

Pharmacy's leadership must rally the profession to revisit, and forever affirm, its philosophy of practice. That is, the profession as a whole must dedicate itself unequivocally to a philosophy of practice that clearly identifies the patient as the primary beneficiary of the profession. Once this philosophy is embraced wholeheartedly by the profession's respective organizational leaders, each sector of the profession should participate collaboratively to plan both strategically and realistically to promote the evolution of practice models that consistently will support this philosophy. This cannot be a "revolutionary" or exclusionary process. Rather, the current environment demands a rational, practical, and inclusive approach that will engage all segments of the profession. Whether considering institutional, community, managed care, or other sectors of the pharmacy profession, an uneven commitment to the transformation and implementation of patient-centered practice models is not acceptable. However, as these practice models evolve, it must be realized that different segments of the profession will progress at different rates and perhaps along different paths. Whether practitioners choose to label their activities as clinical pharmacy, pharmaceutical care, or disease management should be immaterial to the success of this endeavor. Pharmacy's leadership will be confronted with the challenge of valuing the initial differences among various approaches that may be necessary to implement patient-centered care in diverse practice settings while at the same time seeking to achieve solidarity through a shared philosophy of practice.

Issues Influencing Change in Pharmacist Roles and Responsibilities

The future will not permit use of the full-trained [sic] *pharmacist in procedures and tasks that do not require the level of his knowledge and skill.*

The Millis Commission, 1975[25]

…much of what pharmacists will do or not do during a workday is driven by their professional values—by what is important and what obligations are to be met—rather than by some carefully defined list of tasks.

Nimmo and Holland, 2000[21]

Numerous factors will influence the pharmacy profession's ability to accomplish the changes necessary to implement a profession-wide shift in practice philosophy and activities. Concerted and unified efforts from within the profession are a definite prerequisite to change, as has been noted. However, forces external to the profession also will have profound influence on pharmacy's future.

Fortunately, pharmacists gradually are

embracing changing definitions of their professional roles. All segments of the pharmacy profession—practice, research, industry, and academia—are welcoming and accepting change. An underlying premise of this White Paper is that pharmacists' roles and responsibilities should change and that the result of appropriate, ongoing change will determine pharmacist manpower needs over the next decade.

Factors that Oppose Changing Pharmacist Roles

Multiple factors are perceived to be barriers to any change in pharmacists' professional identity. Some of these also have been delineated in an earlier ACCP White Paper, "Clinical Pharmacy Practice in the Noninstitutional Setting."[26] Although it is not the intent of this paper to reiterate all barriers to changing professional roles for pharmacists, several key points deserve discussion.

First, the many differing attitudes and goals of individual pharmacists often contribute to a lack of professional cohesiveness. In fact, the goals of different pharmacists and pharmacy organizations are often at odds with one another. Examples include past debates concerning the entry-level Pharm.D. degree and current controversies surrounding certification and credentialing. Lack of consensus on goals, and the lack of a clear, focused definition of "who we are and where we are headed," are strong forces that can impair effective change.

Second, Donald Brodie observed the following in 1981:

their duty to counsel is completed after asking the patient, “Did your physician tell you how to take this medicine?”

Fourth, some assert that corporate or managed health care is associated with a decrease in number of pharmacy positions. When the relationship between staff size and full-time equivalent (FTE) changes was evaluated in the Pharmacy Manpower Project under the hypothesis that increased managed care penetration was associated with decreased pharmacy staff size and job loss, the hypothesis was rejected.[31] Managed health care systems have *increased* demand for pharmacists by providing more jobs in areas such as data analysis, pharmacy benefit management, formulary construction and maintenance, development of system-wide clinical pathways, drug information, disease-specific clinics, prevention services, and automation.[32] Managed care systems typically utilize sophisticated information technology and possess greater access to patient-specific data to support expanded pharmacist roles.[33]

Fifth, dissension about whether or not to implement the entry-level Pharm.D. degree occupied pharmacy organizations and pharmacists for too long. Regardless of the pros and cons of the ultimate decision, one thing seems evident: the all-Pharm.D. controversy occupied the pharmacy profession’s intellectual and political energies for so long that some members of the profession “took their eyes off” other issues that were critical to the survival and advancement of the profession.

Sixth, business interests (i.e., the bottom line) often are cited as factors opposing professional

about 60% of pharmacists practice.[49] A community pharmacy study described the analysis of more than 600 interventions from more than 93,000 prescriptions obtained under a capitated, managed care Medicaid contract.[31] In this study, product selection interventions resulted in a $20.17 reduction in cost/prescription, whereas interventions directed toward clinical problem resolution resulted in a range of savings from $1188–$1755/intervention. Opportunities for medication interventions exist in virtually all practice settings. Pharmacists routinely must conduct patient counseling, become more actively involved in patient drug therapy decision-making, and consistently intervene to prevent and resolve drug-related problems.

Second, a small percentage of patients (e.g., patients with chronic diseases, such as diabetes or asthma) account for a high percentage of health care costs. Disease state management (DSM) for patients with chronic medical conditions that contribute to high resource utilization increasingly is being conducted through an interdisciplinary collaboration of health care professionals including nurses, primary care physicians, specialist physicians, and pharmacists. Disease state management can occur in either the inpatient or ambulatory care environment. Additionally, patients with chronic diseases visit pharmacies often for prescription and over-the-counter medications. Community pharmacies—and pharmacists—can serve as

Table 1. Selected peer-review publications that document the benefits of pharmacists' clinical practice activities.

Category	Publication	Summary
Ambulatory Care	McKenney JM, Slining JM, Henderson HR, Devins D, Barr M. The effect of clinical pharmacy services on patients with essential hypertension. Circulation 1973;48:1104–11.	Important publication of an early, controlled clinical study demonstrating ability of clinical pharmacy services to effect significant improvement in patients' knowledge of hypertension, number of normotensive patients, and compliance with prescribed therapy.
	Chiquette E, Amato MG, Bussey HI. Comparison of an anticoagulation clinic with usual medical care. Arch Intern Med 1998;158:1641–7.	Comparative trial showing that a clinical pharmacist-run anticoagulation clinic improved anticoagulation control, reduced bleeding and thromboembolic event rates, and saved $162,058/100 patients annually through reduced hospitalizations and emergency room visits.
Community Pharmacy	Munroe WP, Kunz K, Dlamady-Israel C, Potter L, Schonfeld WH. Economic evaluation of pharmacist involvement in disease management in a community pharmacy setting. Clin Ther 1997; 19:113–23.	Controlled study showing that pharmacist intervention in the community pharmacy setting reduced substantially monthly health care costs in patients with hypertension, hypercholesterolemia, diabetes, and asthma. Savings ranged from $143.95/patient/month to $293.39/patient/month.
	Bluml BM, McKenney JM, Cziraky MJ. Pharmaceutical care services and results in project ImPACT: hyperlipidemia. J Am Pharm Assoc 2000; 40:157–65.	Multi-site observational study demonstrating pharmacists' abilities to promote patient persistence (93.6%) and compliance (90.1%) with dyslipidemic therapy. Among 397 evaluable patients followed for a mean of 24.6 months, 62.5% reached and were maintained at their NCEP lipid goal by the end of the study.
	Cipolle RJ, Strand LM, Morley PC, ed. Outcomes of pharmaceutical care practice. In: Pharmaceutical care practice. New York: McGraw-Hill, 1998: 205–35.	Observational study involving provision of pharmaceutical care to 5480 patients during a 12-month period. The authors found significant improvement in attaining therapeutic goals and reducing the level of patient complexity due to resolution of drug therapy problems. Among a cohort of 249 patients aged > 65 years, every dollar invested in providing pharmaceutical care produced a potential savings to the health care system of over $11.
Inpatient Care	Bond CA, Raehl CL, Franke T. Clinical pharmacy services and hospital mortality rates. Pharmacotherapy 1999;19:556–64.	Evaluation of the association between clinical pharmacy services and mortality rates (adjusted for severity of illness) for Medicare patients in 1029 U.S. hospitals. Services significantly associated with lower mortality rates were clinical research, drug information, drug admission histories, and participation on a cardiopulmonary resuscitation team.
	Leape LL, Cullen DJ, Clapp MD, et al. Pharmacist participation on physician rounds and adverse drug events in the intensive care unit. J Am Med Assoc 1999;282:267–70.	Controlled study showing that pharmacist participation in physician rounds in a medical ICU decreased the rate of preventable adverse drug effects due to ordering errors by 66%. The pharmacist's prospective interventions consisted primarily of order correction/ clarification, provision of drug information at the time of therapeutic decision-making, and recommendation of alternative therapy. Nearly all recommendations (99%) were accepted by physicians.

Table 1. (continued)

Category	Publication	Summary
	McMullin ST, Hennenfent JA, Ritchie DJ, et al. A prospective, randomized trial to assess the cost impact of pharmacist-initiated interventions.	Prospective study demonstrating that patients randomized to receive clinical pharmacist intervention had drug costs that were 41%

Implications

Pharmacy faculty and clinical practitioners must make the commitment to provide the expertise and cooperation necessary to develop efficacious education and training programs that can enhance the clinical practice abilities of community pharmacists. The ACCP's involvement in community pharmacy training and certification is essential. We believe that the clinical pharmacy community, working collaboratively with academia, is both ready and able to begin this task.

Observation No. 6

Community pharmacy, and to some extent institutional pharmacy, face serious challenges in establishing patient care practice roles. Barriers to change include rapidly increasing prescription volume; limited opportunity to appropriately deploy pharmacy technicians in the drug distribution process due to legal prohibitions; inability to fully employ technology due to its expense; lack of access to patient-specific data; inefficient and restrictive pharmacy benefit programs; lack of reimbursement for non-

distributive services; workforce dissatisfaction; a

Implications

If pharmacists are to be skilled in working collaboratively with other health care professionals, then a portion of their educational experience, including didactic learning, should be conducted in interdisciplinary settings. Whereas most experiential rotations today are interdisciplinary, this could change in the future if increasing numbers of pharmacy practice experiences are conducted in the community pharmacy and managed care settings. The Millis Commission made the following recommendation: "Because pharmacists must practice in association with other health workers, pharmacy education demands an environment in which other health professionals are being educated and other health professions are being practiced."[25] Similarly, if students will be expected to supervise

people what they want and need. This is not an agenda that we can assign to someone else. Each of us must take personal responsibility for making this happen.

Zellmer, 1996[9]

As we noted earlier in this paper, pharmacy has suffered from a fractionated vision of the profession due to the conflicting perspectives of different practitioner groups. Although a unified vision for all segments of the profession likely will occur with time, the changes in pharmaceutical education and in the health care and pharmaceutical industries are focusing pharmacists' efforts on utilizing their advanced pharmacologic knowledge to improve patient outcomes. The implementation of entry-level Pharm.D. programs has provided an opportunity to increase the consistency of pharmacists' abilities, regardless of their practice setting. The expansion of pharmacists' outpatient roles to include collaboration with other health care professionals in disease state management is an effort to improve patient outcomes and to control spiraling pharmaceutical and health care costs. The increased use of automation and the emphasis on the value of the pharmacist's unique knowledge and skills are other factors that may result in expansion of pharmacists' roles. The future health care environment may hold many opportunities for pharmacists if the leadership and management of the profession can respond quickly to focus the profession's efforts on improving patients' drug therapy outcomes.

Leadership

The role of future pharmacy leaders will be to establish an innovative working environment by projecting a unifying vision for the profession and providing mentoring to pharmacy managers and staff. Pharmacy leaders must emphasize the responsibilities of the pharmacist to ensure the safe use of drugs by demonstrating a commitment to serving the drug-related needs of patients and other health care professionals.[75] Pharmacy leaders can provide direction to all health professions in improving drug-related outcomes. If future pharmacy leaders can embrace the objectives of health care reform (i.e., improved patient outcomes at an affordable cost to the patient and society) and proactively direct pharmacists' efforts to improve the medication use system, the profession will be well-positioned to adapt to future challenges.[76] Pharmacy does not require visionary "giants." In fact, future challenges will require that pharmacy leaders capitalize on the diversity of the pharmacy profession and accept responsibility for developing leaders from within its organizations. Pharmacy should attempt to foster an organizational and professional culture characterized by collaboration, teamwork, and empowerment.[77]

Accomplishing the necessary transformation in professional philosophy and roles will require that pharmacy's leadership engage in eight critical processes. First, pharmacy leaders must establish a sense of urgency to identify and seize major opportunities for the profession. Second, leaders must form a coalition to lead the change. Third, they must create a vision and develop strategies to achieve it. Fourth, they must communicate the vision and use examples from early coalitions that engage other pharmacists in achieving the vision. Next, they need to empower others to act on the vision by removing obstacles, encouraging risk-taking and nontraditional ideas, and changing systems that undermine the vision. Sixth, pharmacy leaders must plan for and create visible short-term accomplishments, and then recognize and reward pharmacists who are involved in achieving these initial outcomes. Seventh, leaders will need to consolidate improvements and produce more change by utilizing their increased credibility in the system. Even small improvements that occur with change will encourage pharmacists to follow leaders who want to make a difference. Sustaining the process by hiring, promoting, and developing pharmacists who can implement the lesTc 0.118 Tw T*nvolved 0789h4ing, andovements that

must exhibit trust, encourage new ideas, and delegate responsibilities to achieve the vision.[75] Frequent, sincere reinforcement and recognition

dispensing of 3.5–4 billion prescriptions annually by the year 2005, an increase of as much as 44% from the estimated 2.8 billion prescriptions that were dispensed in 1999.[14, 82] If Medicare offers an outpatient prescription drug benefit, this would improve access to prescription drugs for the one-third of beneficiaries who currently lack coverage, further fueling the increase in future prescriptions.[84] To accommodate rising prescription demand and to enhance market share, chain pharmacies are increasing the number of chain outlets and expanding store operating hours.[85] As we enter a new millennium, women will outnumber men among the pharmacist workforce, primarily as a consequence of the increased number of female pharmacy graduates and the retirement or death

downsizing of the pharmacy workforce predicted

Qualifications for Pharmacy Practice

Students prepared at the entry level are general practitioners who coordinate and render pharmaceutical care. A system of pharmaceutical care requires the participation of both generalists and specialists.

The Commission to Implement Change in Pharmaceutical Education, 1991[94]

The issue of credentialing in pharmacy is of critical importance because it has the potential to elevate the profession to new levels or to mire it in divisiveness.

Bertin, 1999[95]

Any system that assesses and recognizes practitioner competence must be based on a valid and reliable method of assessing capability. That such systems are possible is verified by the existence of specialty certification mechanisms which use experience and examinations as assessment tools.

The Commission to Implement Change in Pharmaceutical Education, 1993[96]

Requisite education and credentialing of pharmacists will be important issues as the profession pursues patient-centered practice roles. As recounted earlier, the debate surrounding the most appropriate degree for entry into the profession has been resolved as we begin a new century. However, emerging controversies surrounding postgraduate credentialing processes now threaten to embroil the profession in renewed debate. We believe that the credentialing issue—in particular the controversy associated with certification—has the potential to spark the same level of discussion that occurred during the "B.S. versus

state boards of pharmacy) determine by examination (e.g., NAPLEX) whether an individual has the required education and skill to practice pharmacy. The boards of pharmacy in

initial licensure. *Certificate programs* are defined by ACPE as "...structured and systematic postgraduate continuing education experiences for pharmacists that are generally smaller in magnitude and shorter in time than degree programs, and that impart knowledge, skills, attitudes, and performance behaviors designed to meet specific pharmacy practice objectives."[99]

Credentialing Options

Excluding pharmacist licensure, postgraduate credentials are obtained on a strictly voluntary basis. Pharmacists may elect to obtain credentials at the disease, generalist, or specialist levels. Post-licensure credentialing programs should be subject to national standards. Training programs also may be guided by national standards, such as those used in the accreditation of residency programs. Although pharmacy has a national accrediting body for pharmacy residencies (The Commission on Credentialing within the American Society of Health-System Pharmacists [ASHP]), many pharmacy residency training programs are not accredited; therefore, they do not undergo national peer review.[100, 101] Whereas some pharmacy fellowship programs are subjected to voluntary peer review through ACCP, most pharmacy fellowship programs do not undergo national peer review.[101] The recent proliferation of post-licensure disease-specific credentialing programs, often not subject to national standards, has created concern about program quality, consistency, and value. Confusion is rampant, as neither pharmacists nor the public clearly can define the minimal standards for these programs.

General Elements of Post-Licensure Certification

Voluntary certification has emerged as the highest demonstrated professional level of achievement in pharmacy practice. Certification provides public identity for those pharmacists who have demonstrated knowledge deemed important by professional peers. Pharmacy, like all professions, endorses certification as a means of elevating professional standards. Certification can be used both to expand the professional influence of pharmacy within health care systems and to protect professional boundaries. Certification of licensed pharmacists may be a means of verifying advanced professional knowledge and skills. Certification processes usually are established by professional, nongovernmental agencies.[99] In addition to evaluating an individual's knowledge, the certification process also should document the individual's formal training, professional experience, and clinical skills. The individual seeking certification usually is assessed using a national standard that is more rigorous than that required for entry into the profession by licensure. Certification bodies should not provide the training or education required for certification examinations. Instead, independent professional, academic, or corporate entities are best suited to provide preparatory materials and courses.

Specialist Pharmacist Certification. In 1976, the APhA established the Board of Pharmaceutical Specialties (BPS) to recognize specialty practice areas, define knowledge and skill standards for recognized specialties, evaluate the knowledge and skills of individual pharmacist specialists, and serve as a source of information and coordination for pharmacy specialties.[102] The BPS has recognized five specialty practice areas: nuclear pharmacy, nutrition support pharmacy, oncology pharmacy, pharmacotherapy, and psychiatric pharmacy. Board certification by the BPS indicates that a pharmacist has demonstrated an advanced level of education, experience, knowledge, and skills—beyond that required for licensure—in a specialty practice area. Board of Pharmaceutical Specialties certification is the only such designation within pharmacy that recognizes advanced, specialized skills and knowledge against an established national standard. Four eligibility criteria are defined for BPS recognized specialties: an entry-level pharmacy degree, an active pharmacy license, additional training within the respective specialty area, and successful completion of the specialty certification examination.[102] Whereas the specialized education or experience required for certification varies among the BPS specialties, all require either several years of prior specialty practice experience or completion of specialty residency or fellowship training. The BPS requires recertification every 7 years, with each specialty having separate requirements for the recertification process. As of January 2000, more than 2900 pharmacists have been certified by the BPS.[102]

Added Qualifications within a Recognized Pharmacy Specialty. The BPS also recognizes focused areas within established pharmacy specialties. Demonstration of enhanced training

and experience within one segment of a BPS-sanctioned specialty practice area is recognized by the designation "Added Qualifications."[102] This designation denotes further differentiation *within a specialty.* Unlike the medical profession, pharmacy does not require such subspecialty differentiation through separate board examinations. To establish a new area of Added Qualifications, a group first must petition the BPS to recognize the desired subspecialty. If this petition is approved, individuals wishing to be considered for Added Qualifications must submit a portfolio that documents their enhanced experience and training. If the committee of the Specialty Council believes the portfolio meets established requirements, individuals receive a new BPS Certificate recognizing their status as "Board Certified with Added Qualifications." The Added Qualifications practice area first recognized by the BPS was Infectious Diseases within the specialty of Pharmacotherapy, approved by the Board in 1999.

Generalist Pharmacist Certification. The APhA proposed a certification program in "pharmaceutical care" in the late 1990s, although the program has not yet been developed. This was intended to be an advanced generalist designation but not as intensive as the pharmacotherapy specialty or other specialty certification processes performed by the BPS. Another generalist certification program was developed for pharmacists in geriatric pharmacy practice. The Commission for Certification in Geriatric Pharmacy (CCGP) was established by the American Society of Consultant Pharmacists (ASCP) in 1997.[103] This national voluntary certification program requires successful completion of a written examination. To be eligible to take the CCGP certification examination, the pharmacist must hold a current license and possess a minimum of 2 years of practice experience. According to CCGP, no special training or clinical experience in geriatrics is required, although a review course is available on the ASCP Web site, and numerous continuing education programs can help pharmacists prepare for the exam.[103, 104] Domains included in the geriatric pharmacy practice exam are patient-specific activities, disease-specific activities, and quality improvement and utilization management activities.[103]

Interdisciplinary Certification. Most certification processes in health care emerged within individual health care disciplines. This is also true for pharmacy. During the past 2 decades, however, interdisciplinary certification involving two or more health care disciplines emerged. The American Academy of Pain Management provides voluntary certification for interdisciplinary pain practitioners.[105] Practitioners from medicine, pharmacy, nursing, psychology, counseling, physical therapy, chiropractic, and social work have been accorded voluntary certification as interdisciplinary pain managers. The National Certification Board for Diabetes Educators designates qualifying health care practitioners as Certified Diabetes Educators (CDE).[106] The CDE designation assures the public that the individual demonstrated excellence in diabetes education. The American Board of Applied Toxicology (ABAT) provides voluntary certification of nonphysician specialists in applied clinical toxicology.[107] Certified individuals are designated as ABAT Diplomates (DBAT). The American Board of Clinical Pharmacology (ABCP) provides voluntary certification for nonphysicians in applied pharmacology.[108] On successful completion of professional requirements and certification exams, the ABCP issues a certificate that designates the individual as "Accredited in Applied Pharmacology."

Disease-Specific Credentialing

Disease-specific credentialing is designed to document a pharmacist's ability to provide disease-specific care beyond the dispensing of medications.[109] The National Institute for Standards in Pharmacist Credentialing (NISPC) serves as the credentialing body for this process. The NISPC was formed by NABP, NCPA, and NACDS in June 1998; the APhA joined the group in 1999. Pharmacists who desire to be credentialed voluntarily in one of four disease states must pass an NABP disease state management exam. Currently, disease state management exams are available for anticoagulation, asthma, diabetes, and dyslipidemia. The exams are designed to serve as standardized assessment tools that measure the application of knowledge and judgment of pharmacists providing disease state management. The NABP creates and administers the disease state management exams, which were offered in more than 20 states in 1999. Pharmacists may elect to become credentialed in more than one disease state and combine disease-specific credentialing with other continuing education activities.

Whereas disease state management exams assess knowledge and skills related to management of each respective disease state, they cannot assess clinical training or experience. Because training and experience are certainly important prerequisites for the provision of patient care, other certification processes (e.g., BPS certification) require validation of these prerequisites. The NABP maintains a database on its Web site that allows the public and third-party payers to verify pharmacists' disease-specific credentials obtained through NISPC.[110] Successful completion of a disease state management exam qualifies the pharmacist to apply for a provider number and receive payment for disease-specific clinical services in a pilot Medicaid waiver program in Mississippi.

some payers. On the negative side, these programs are limited in scope, require no clinical training or clinical experience, and may fragment patient care. Furthermore, if a pharmacist's disease management abilities are limited to only selected diseases, he or she may not be able to impact fully the number of patients that health care payers expect. We also are concerned that a pharmacy practitioner could be credentialed in an area of *disease management* without having acquired any prior clinical patient care experience. In our view, this could compromise patient care.

The role of generalist pharmacist certification remains to be determined. As it has not yet been developed, a pharmaceutical care certification cannot be evaluated. However, pharmaceutical care is a *philosophy of practice* that the Commission to Implement Change in Pharmaceutical Education characterized as follows:

> "Pharmaceutical care focuses pharmacists' attitudes, behaviors, commitments, concerns, ethics, functions, knowledge, responsibilities, and skills on the provision of drug therapy with the goal of achieving definite outcomes toward the improvement of a patient's quality of life. These outcomes of drug use are: (1) cure of a disease; (2) elimination or reduction of symptoms; (3) arresting or slowing a disease process, (4) prevention of disease; and (5) desired alterations in physiological processes, all with minimum risk to patients. Just as it is generally assumed that physicians are primarily involved in medical care and nurses in nursing care, pharmacists are the primary providers of pharmaceutical care."[13]

It appears that it would be virtually impossible to describe a *unique* set of knowledge and skills that would encompass the domains for certification of pharmaceutical care. Even if such a set of domains were defined, the breadth of such a certification program would be enormous, presumably approaching the outcome expectations for the doctor of pharmacy degree. Furthermore, it is inconceivable to us that the profession or public would find value in certifying a philosophy of practice—to follow the analogies from the previous quotation, medicine has no "medical care" certification and nursing does not certify "nursing care." W hC 11 0, a906 app describe *[(4 pion e *5d(12 elTc J 0e. -5d(1tients.

patient care competence.

6. Focus, in academia, not only on manpower, but also (perhaps even more) on professional empowerment. Pharmacy educators must maintain high expectations for performance of both general and professional educational outcomes; contribute to the development of new post-licensure education and training programs that help existing practitioners "retool"; promote continued expansion of residency programs, including nontraditional programs (mini-residencies); and assume leadership roles in technician training and certification.
7. Foster collaborative efforts by professional organizations, academia, and health care systems to develop new models of pharmacy practice in the community practice setting.

Recommendations for ACCP

1. Collaborate closely with other national pharmacy organizations and assume a leadership role in the profession's adoption of a unifying philosophy of practice.
2. Place increased emphasis on the development of leadership abilities among the rank-and-file membership.
3. Embrace community pharmacy and seek to assist community practitioners in acquiring additional knowledge, skills, and attitudes that can expand pharmacists' impact on patient outcomes.
4. Encourage colleges and schools of pharmacy to explore how current doctor of pharmacy programs can prepare graduates better for contemporary generalist practice.
5. Encourage NABP and state boards of pharmacy to continue their efforts toward creating licensure exams that are more reflective of pharmacists' patient care responsibilities.
6. Support, and assist in the development of, certificate programs and certification processes that provide for appropriate assessment of knowledge and skills while also validating adequate levels of experience.
7. Oppose pharmacist certification that lacks unique (differentiating) and definable knowledge domains, or adequate assessment of clinical training or experience.
8. Work inclusively with other pharmacy organizations, associations, and CCP to establish a cohesive and coherent plan for pharmacist credentialing.
9. Explore the feasibility of engaging in cooperative political advocacy efforts with community pharmacy organizations and trade associations to pursue agendas of mutual professional interest (e.g., reimbursement for pharmacists' clinical activities that improve patient outcomes).

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