

Journal of Pharmacy Practice

<http://jpp.sagepub.com>

A Review on Specialization in Pharmacy Part II: A Commentary on Postgraduate Training and Pharmaceutical Care

David L. Laven

Journal of Pharmacy Practice 2002; 15; 504

DOI: 10.1177/089719002237876

The online version of this article can be found at:

<http://jpp.sagepub.com/cgi/content/abstract/15/6/504>

Published by:



<http://www.sagepublications.com>

On behalf of:

New York State Council of Health-system Pharmacists

Additional services and information for *Journal of Pharmacy Practice* can be found at:

Email Alerts: <http://jpp.sagepub.com/cgi/alerts>

Subscriptions: <http://jpp.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations <http://jpp.sagepub.com/cgi/content/refs/15/6/504>

A Review on Specialization in Pharmacy—Part II: A Commentary on Postgraduate Training and Pharmaceutical Care

David L. Laven, NPh, CRPh, FASHP, FAPhA

Many opportunities exist for pharmacists who desire to expand their role in providing comprehensive pharmaceutical care services to patients and other health care providers, who they serve and collaborate with on a daily basis. Consequently, there is a strong trend within pharmacy to specialize in areas of professional interest. In many respects, pharmacy has turned toward the medical model in addressing its needs and providing a framework for specialization in practice. With respect to generalist and specialized practitioners and varying initiatives relative to the medical model, the concept

of specialization in pharmacy has recently developed some interesting tangents when issues of certification, credentialing, disease-state management, and added qualifications enter the discussion. The previous installment in this 2-part article focused on specialization in pharmacy and offered a review of the current initiatives by which a pharmacist can achieve specialty status. In this concluding installment, discussion is offered that addresses pharmaceutical care and postgraduate training in pharmacy relative to future professional and societal expectations for pharmacy.

KEY WORDS: pharmacy, specialization, postgraduate training, credentialing, pharmaceutical care, certification.

THE INCREASING COMPLEXITY of health care has and will continue to create opportunity for pharmacists in many practice settings encouraging them to expand their role in providing comprehensive pharmaceutical care services. Today, specialization in pharmacy is viewed by organized pharmacy as an inevitable result of the evolution and maturation of our profession. Clearly, the opportunities that pharmacists see for themselves under the specter of specialization will be predicated, in part, upon societal demands and an ever-evolving health care delivery system. There will continue to be considerable speculation in terms of what path(s) pharmacy should choose in terms of meeting such challenges and opportunities while continuing to foster the specter (or realities) of specialization and its place within the profession. In this regard, the ensuing

discussion may do little to diminish the intensity of this conversation.

To consider what the future may hold, we need to examine our past and where we presently stand today. In doing so, if we are satisfied with the results, then perhaps within this mix the answers will be found to the many questions that can be raised concerning the future of pharmacy and specialization. In the first installment of this 2-part discussion, information was presented as to the current level of professional opportunity with respect to specialization and certification in pharmacy. This second installment will continue to emphasize selected issues relative to pharmaceutical (postgraduate) education and training and how specialization will fit within evolving attitudes on pharmaceutical care and growth of pharmacy as a leading health care profession.

PHARMACEUTICAL CARE: PHILOSOPHY FOR CHANGE OR EDUCATIONAL HURDLE

The concept of pharmaceutical care was offered almost a decade ago by Hepler and Strand.¹ It continues to undergo various interpretations and applications

To whom correspondence should be addressed: David L. Laven, NPh, CRPh, FASHP, FAPhA, President and Lead Consultant, Gammascan Consultants, 633 Sabal Lake Dr, #103, Longwood, FL 32779. E-mail: dlavenrx@earthlink.net.

JOURNAL OF PHARMACY PRACTICE 2002.15;6:504–514
© 2002 Sage Publications
DOI: 10.1177/089719002237876

within pharmacy today, depending on which element of organized pharmacy or other facet within the health care delivery system is leading the discussion. Organized pharmacy's interest in the pharmaceutical care concept appears to be all-consuming, but is this same high interest level evident and embraced among pharmacists in general, given the wide range of professional practice settings and health care market forces they encounter daily? As a profession, has pharmacy been successful in pursuing the new paradigms that pharmaceutical care can bring forth or, as a profession, is it still hindered by traditional thinking, expectations, and mannerisms and, thus, inundated with optimistic rhetoric on pharmaceutical care and specialization relative to pharmacy's future? In many respects, there is truth to be found in both of these statements. There are many possible starting points in this discussion, which, when considered in total, may indicate our reluctance and/or inability to address the genuine meaning of pharmaceutical care and specialization and to ensure an adequate educational process for meeting future pharmacy challenges and opportunities. Let us first start this discussion with the notion of pharmaceutical care, given that so much in pharmacy today seems to revolve around this concept since its promulgation.

In many ways, pharmaceutical care appears as a restatement of the "clinical pharmacy" and "diversification" messages that were widely discussed among pharmacy's many ranks throughout the 1980s. The notion that pharmacists should divorce themselves from a sole drug-product distributive orientation to one calling for a broader clinical focus, working collaboratively as a member of a multifaceted patient management health care team, is just as relevant today as it was 20 years ago. Along the way, if pharmacists begin to branch out into new areas of patient-oriented, clinical-focused services, then it is surmised that there can exist many avenues for specialization in pharmacy.

As visionary as many leaders in organized pharmacy appear to have been and strive to be still today, they, like most pharmacists, are hindered by some of the colloquialisms of pharmacy's past. For example, the notion of "pharmacogenomics" is being discussed more frequently in many circles of organized pharmacy as we strive to forecast its potential impact on pharmacy's future and ways for pharmacists to embrace the many challenges and opportunities that will ensue. If we are to truly address emerging technology and consider how pharmacy may embrace it for the future, have we sufficiently learned from the mistakes of our past and are we posed not to perpetuate them? In some respects, I believe the answer to this question is no. For the moment, let us consider how pharmacy has and continues

to react to one new technology that formally emerged during the 1960s and 1970s—namely, radiopharmacy or nuclear pharmacy—and see what valuable lessons can be highlighted. In recent years, Dennis P. Swanson and others have suggested the use of the term radiologic pharmacy. The notion of radiologic pharmacy can describe how pharmacists can more fully embrace practice environments involving all types of diagnostic (imaging) drugs and related therapy agents (eg, radiology, computed tomography [CT], ultrasound, magnetic resonance imaging [MRI]), and not just those drugs associated with nuclear pharmacy and nuclear medicine practice per se.

In a commentary written in 1987, Zilz² questioned whether pharmacy wanted to embrace the emerging fields of diagnostic and therapeutic immunology because of pharmacy's lack of concern and interest in another emerging high technology area of the time—namely, nuclear pharmacy. Zilz noted that drugs used in medical imaging are indicative of an area that appears to be part of pharmacy to some practicing pharmacists but is essentially an area ignored by organized pharmacy. Overall, his comments focused on the professional opportunities involving primarily radiopharmaceuticals used in nuclear medicine. In a contemporary sense, we can just as easily include drugs used today in other imaging modalities, such as radioopaque contrast media and various interventional approaches used in radiology, contrast enhancement agents for use in ultrasound, CT, and MRI, as well as ultra-short-lived radiopharmaceuticals used in positron emission tomography (PET) and select radioactive materials used in brachytherapy. Given this observation, it is logical to question whether organized pharmacy (including academia) is willing to accept the challenge of restructuring the profession to meet emerging opportunities resulting from not only nuclear (or radiologic) pharmacy but also areas such as pharmacogenomics that embrace new technological advancements in drug development. With respect to nuclear (radiologic) pharmacy, it has been shown that a majority of colleges of pharmacy provide their students with little to no exposure to a meaningful education and experiential knowledge base that they can rely on during the course of their professional careers as pharmacists.³

Today, we still do not have a unified, broad-scope statement of pharmaceutical care that embraces the full spectrum of pharmacist involvement with any kind of drug product. It is generally recognized in organized pharmacy circles that when describing pharmaceutical care, the primary focus is on pharmacists assuming active roles in the design (including drug selection), im-

plementation, and monitoring of any patient care plan, with emphasis on the optimal use of therapeutic drugs so as to achieve optimal (drug) therapy outcomes. Given this perspective, why does a majority of organized pharmacy fail to emphasize the importance for pharmacists developing direct or indirect clinical roles to ensure the proper use of diagnostic (imaging) drugs as integral components in the diagnostic workup in patient care plans, the goal of which is to achieve optimal diagnostic testing outcomes? To date, only one professional pharmacy organization* has sought to establish an official policy or position statement emphasizing an interpretation of pharmaceutical care that embraced pharmacists' roles with respect to both diagnostic (imaging) and therapeutic drugs and achieving optimal outcomes given their respective use in patient care management plans.

For example, the American Society of Health-System Pharmacists (ASHP) issued a Statement on the Pharmacist's Responsibility for Distribution and Control of Drug Products that addresses such potential professional responsibilities in many nontraditional drug categories, including radiopharmaceuticals and radiopaque contrast media.⁴ This statement also speaks of the advocacy responsibility that pharmacists have with respect to decisions and policies about the use of drug-related devices as they affect drug therapy. Yet, the ASHP has never been able to incorporate similar sentiments in any of its position statements with respect to pharmaceutical care.⁵⁻⁸

The Joint Commission on the Accreditation of Health Care Organizations (JCAHO) emphasizes in its standards for pharmaceutical services that pharmacy is responsible for drugs and related services (including drug information) in all organizational elements of the institution/hospital setting where they are used in patient care.⁹ Although it is logical to assume that such a JCAHO expectation would be universally applied to all hospitals in the United States, it is ironic to note that fewer than 2% to 4% of all hospitals today have placed

diagnostic imaging drugs under the control of pharmacy. For the vast majority that fail to provide any pharmacy administrative and/or professional oversight, as one might expect for an institutional-based pharmacy trying to meet JCAHO pharmaceutical service standards, the JCAHO routinely overlooks such deficiencies and rarely issues any citations in this area during its inspection processes. How do we attempt to explain such discrepancies between rhetoric and practice?

Over the past decade, many papers have been written and official policy and position statements promulgated by the American Public Health Association (APHA) and the ASHP, among other organizations at the national and state level, to try and address oversights in pharmacy's attitudes toward many nontraditional practice areas.^{4,10-24} Some positive movement has been achieved in terms of establishing official policy and position statements that would embrace a broader paradigm for change in professional attitudes relative to nontraditional practice areas and the implementation of pharmaceutical care.^{4,11-24}

Throughout the 1990s, the American Association of Colleges of Pharmacy (AACP) released a number of White Papers that examined various facets of pharmaceutical education and the changes that would be necessary to meet the challenges of the future.²⁵⁻³⁰ Within these documents, the emphasis on the role of pharmaceutical education and other professional expectations relative to nontraditional areas of pharmacy may be implied, but they are not as well defined as they should be. The commitment for change as stated in these AACP documents will fall short of the documents' intended goals. Several reasons for this can be found in the general inflexibility within academic circles for hiring the requisite faculty, permitting realignments in curricular content, and fostering the establishment and maintaining suitable training pathways that will enable pharmacy practitioners to meet these goals on a wide scale.

We seem to have lived through the debate in pharmacy over the value of obtaining only a BS versus a PharmD degree and what is needed by practitioners entering the profession. The American Council on Pharmaceutical Education (ACPE) released its White Paper in 1997 addressing accreditation standards and guidelines for professional programs in pharmacy leading up to the PharmD degree.³¹ This ACPE document, in part, sought to address the concepts of pharmaceutical care and incorporate them into the spectrum of pharmaceutical education as it was being presented for meeting future needs and expectations throughout pharmacy. However, definitive language for the manner by which

*On March 19, 2002, the House of Delegates of the American Pharmaceutical Association adopted language which merged two separate policy statements addressing pharmaceutical care (one focusing on pharmacists' roles with respect to therapeutic drugs, and the other on roles with respect to diagnostic [imaging] drugs) into one unified policy statement. This new policy statement entitled *The Pharmacist's Role in Therapeutic Outcomes* states: "1) APhA affirms that achieving optimal therapeutic outcomes for each patient is a shared responsibility of the health care team," and "2) APhA believes that a primary responsibility of the pharmacist in achieving optimal therapeutic outcomes under pharmaceutical care is to take an active role in the development, selection and use of diagnostic and therapeutic drugs, implementation of a therapeutic plan, and the appropriate monitoring of each patient." (Available online at www.alphanet.org. Retrieved October 2, 2002.)

pharmacy's academic institutions were to embrace and prepare practitioners for entering nontraditional areas of pharmacy practice is less apparent. A similar conclusion can be found in the report from AACP's Janus Commission. This report noted that one of the potential deficiencies in pharmaceutical education was the apparent difficulty of applying concepts supportive of pharmaceutical care not just to individual patients by individual providers, while embracing the challenges associated with rapid, evolving, and more integrated and population-based systems of health care.³²

PROFESSIONALIZATION VERSUS SPECIALIZATION

In considering the many changes taking place within health care today and the ever-evolving needs of society, are we as a profession truly willing and capable of meeting the future challenges and needs of pharmacy relative to the many publics that its practitioners serve? Or are we merely going through an adjustment phase that is partly shrouded in the specter of progress (new rhetoric) while we perpetuate our traditionalist approach to and thoughts about the profession and pharmaceutical education on matters involving professionalization and/or specialization? The answer may not be as clear-cut as many would like it to be.

Reengineering pharmacy to advance clinical practice, as well as the overall quality of pharmacy practice in general, is indeed noteworthy. Of the many transformations resulting from managed care, the current emphasis on understanding and measuring the quality of health care is among the most compelling and challenging.³³ Likewise, the notion of using pharmacists as advisers to physicians and other health care providers to develop, implement, and monitor patient management care plans in striving to achieve optimal therapy outcomes via risk-sharing, collaborative practice arrangements is paramount in pharmacy's collective consciousness.³⁴ To foster further recognition of pharmacists as "pharmaceutical care specialists," permitting a greater clinical focus along with reimbursement for professional services rendered, it is politically expedient to consider ways in which we can improve medication use and thus minimize or avoid prescribing errors, medication-dispensing errors, and other adverse drug events.³⁵⁻³⁷

Professionalization and specialization are two concepts that individual practitioners or an entire profession can turn to when seeking to establish a new adaptive posture within the framework of an ever-changing health care environment. Nimmo and Holland³⁸⁻⁴² pub-

lished a 5-part series examining various transitions occurring within pharmacy practice, along with models (existing and theorized) that could serve pharmacists or pharmacy's ability to meet societal needs for quality pharmaceutical care. As they pointed out, pharmacy's transition to pharmaceutical care will not be instantaneous but will continue for an indefinite period to include a shifting balance of 5 practice models: drug information, self-care, clinical pharmacy, pharmaceutical care, and distribution.³⁹ According to the AACP Task Force on Professional Socialization, "The future of pharmacy not only rests on the technical expertise of pharmacists, but also on their effective approach to practice."⁴³ The key to motivating pharmacists to commit practice change lies in fostering a change in intrinsically held professional attitudes, not in emphasizing a structured extrinsic reward system.⁴² However, to achieve this, we must be able to shed ourselves of the prejudices of what is considered acceptable practice endeavors within pharmacy. Some pharmacy leaders have seen professional pluralism as chaos and conflict and, therefore, seek ways in which they can contain or control professional "pioneers." Organized pharmacy cannot, and should not, attempt to control most of the adaptive segments of pharmacy, any more than it should seek to control the ever-changing health care environment. Any effort to inhibit, isolate, or ignore pharmacy's highly adaptive "reprofessionalizing" segments (eg, clinical pharmacists, nuclear pharmacists, veterinarian pharmacists, hospice pharmacists, homeopathic pharmacists) might provide temporary relief from anxiety and might even reduce intraprofessional conflict.⁴⁴ Such control has been attempted in a number of ways. For example, at the academic level there are imposed restrictions on or elimination of didactic education and experiential training in areas not deemed by organized pharmacy as being appropriate professional pharmacy endeavors. Pharmacists seeking collegial interaction among similar practitioners in an emerging new area of pharmacy may run into a wide range of organizational hurdles and barriers (lack of opportunity for pursuing educational, legislative, and other policy-setting processes, as well as lack of visibility and active leadership roles), given the focus and philosophical makeup of many pharmacy associations at all levels. Regardless of the approach, in the long run such a course of action may prove to be a serious error in judgment.

Organized pharmacy has the opportunity to foster the development of pharmacy practice in several ways. First and foremost, it should resist restricting or scapegoating pharmacy's adaptive pioneers. By way of

an example, let us consider nuclear pharmacy. Here is a technology and area of pharmacy practice that has been barely embraced by organized pharmacy since its inception almost 40 years ago. To this day, a large number of state boards of pharmacy fail to recognize this area of practice as being part of pharmacy. Of those state boards of pharmacy that have made some effort to embrace the National Association of Boards of Pharmacy Model Regulations for Nuclear Pharmacy, less than a dozen can be described as remaining proactive in addressing issues affecting this area of pharmacy practice. Except for a relative few, a majority of professional organizations at the local, state, and/or national levels have been consistently reluctant to routinely embrace nuclear pharmacy and, thus, address the needs and concerns of its practitioners within the framework of opportunity it makes available to other mainstream components. In considering the academic ranks of organized pharmacy, it has been shown that out of 6 years of formal education leading up to the PharmD degree, the average pharmacy student may receive the sum total of 4 to 6 contact hours of didactic educational material relative to nuclear pharmacy practice.³ Additionally, pharmacy students have been encouraged to avoid or have been prevented from experiencing an internship or clerkship in nuclear pharmacy, as it may have been deemed inappropriate preprofessional experience by the pharmacy school and/or the state board of pharmacy.³

POSTGRADUATE TRAINING IN PHARMACY

Nimmo and Holland⁴¹ noted that pharmacists' professional socialization is one of several major contributing factors leading to receptiveness to changes in practice. Professional socialization is the process by which a student or young practitioner acquires the roles, behaviors, and attitudes expected of a member of the profession involved.⁴⁵ Pharmacy is a knowledge-based profession that possesses definable levels of skills and knowledge. These levels have been differentiated through training and certification. As such, all pharmacists must have a common level of knowledge and skills beyond that which is attainable through current BS and PharmD degree programs. With additional postgraduate professional education for all graduates, coupled with specialized residency and fellowship training, pharmacists should be properly prepared to meet the demands of a changing health care environment. However, is there a sufficient number of programs to meet the demands of a profession that is seeking to reengineer itself and meet its obligations to

society in all the possible areas of practice that the concepts of pharmaceutical care can be applied? Has organized pharmacy opted to create additional levels of advance training to offset the shortcomings and inflexibility that exist at the undergraduate level in terms of preparing pharmacy students and young practitioners for the professional demands of the future? Is the trend toward the development of more pharmacy practice residency programs sufficient in preparing future practitioners for the genuine clinical demands of a changing health care environment? Or does organized pharmacy seem intent on creating an elitist-like cadre of practitioners, individuals who must have a pharmacy practice residency before doing a specialty residency (or making specialty residencies 2 years long) and changing some specialty residencies to pharmacy practice residencies with emphasis in a specific area.⁴⁶

According to Guerrero,⁴⁶ there will likely be the need to double the number of postgraduate residency training programs in the next 5 to 10 years. Since 1992, the number of residency applicants has exceeded the number of residency positions available through the ASHP Resident Matching Program, and in 1999 about 250 applicants were not matched and 75 programs did not fill their positions.⁴⁶ Tables 1 and 2 summarize the various types of residency programs that are available to pharmacy students and practitioners today from the AACP and ASHP, respectively.

Outside of professional areas labeled "pharmacy practice," "primary care," "ambulatory care," "drug information," and "infectious diseases," to name a few, pharmacy's desire for practitioners who specialize in many different areas is vastly underserved. In some respects, if there is a shortage of specialized pharmacists, it may be due to various "artificially" created academic and professional hurdles. For example, there are many institutions that would like to hire pharmacists with specialized knowledge in areas such as pediatrics, nutrition support, and psychiatric pharmacy. However, on a per annum basis, the maximum number of practitioners emerging from recognized postgraduate residency and fellowship programs in these areas is only 69, 7, and 43 pharmacists, respectively. This hardly appears to be a sufficient number of specialists to meet nationwide societal and professional needs. It can be argued that there are many pharmacists who, just because they have not progressed through advanced training programs, are any less capable of meeting patient needs in pediatrics, nutrition support, and psychiatric pharmacy than those who have participated in these programs. Many pharmacists who graduated as generalists from pharmacy schools today are potentially available to serve in these areas, especially if their

Table 1.
Review of the Type of Pharmacy Residencies and Fellowships Recognized by the American Association of Colleges of Pharmacy

	Total No. of Residencies	Total No. of Participants in Residencies	Total No. of Fellowships	Total No. of Participants in Fellowships
Administration	4	4	0	0
Ambulatory care	27	42	2	2
Cardiology	6	7	11	13
Clinical pharmacology	1	2	1	1
Community pharmacy ^a	11	26	0	0
Critical care	21	28	11	12
Drug information	26	32	0	0
Drug research/development	0	0	4	17
Emergency medicine	2	3	0	0
Endocrinology	1	1	0	0
Family medicine	9	11	0	0
Gastroenterology	1	1	0	0
Geriatrics ^b	12	15	0	0
Hospice	1	1	0	0
Infectious diseases	19	22	19	25
Internal medicine	10	12	0	0
Managed care ^c	9	11	1	1
Nephrology	2	4	4	4
Neurology	2	1	3	3
Nuclear pharmacy	2	2	0	0
Nutrition	2	2	0	0
Oncology	13	15	6	11
Outcomes research	0	0	4	6
Pain management	1	1	0	0
Pediatrics	23	33	6	7
Pharmacoeconomics	1	2	8	12
Pharmacoepidemiology	0	0	2	2
Pharmacokinetics	2	3	7	10
Pharmacometrics	0	0	1	1
Pharmacotherapy	5	8	0	0
Pharmacy practice	79	239	0	0
Primary care	16	24	1	1
Psychiatry	9	14	7	12
Pulmonary care	0	0	3	4
Research administration	0	0	1	1
Rheumatology	1	1	0	0
Toxicology/poison control	2	2	0	0
Transplantation	4	5	7	7
Women's health	1	1	0	0
Total	325	575	109	152

a. Some programs established in conjunction with the American Pharmaceutical Association.

b. Some programs established in conjunction with the American Society of Consultant Pharmacists.

c. Some programs established in conjunction with the American Association of Managed Care Pharmacy.

practice setting requires them to use and enhance their skills. Given the difficulties for sustaining existing residency and fellowship programs, as well as finding the resources to establish new programs, one can easily question whether the whole concept of “specialization” is truly serving pharmacy and societal needs. This is especially so when, in many areas of professional interest, there is only a handful of individuals (5 or fewer) who receive advanced training and are avail-

able to enter the health care market each year. Additionally, in light of the ongoing shortage of pharmacists nationwide and the ever-increasing employment opportunities that emphasize advanced training and/or specialization, it is reasonable to speculate that the true value of generalist pharmacists is being diminished in favor of recruiting only pharmacist specialists. In many practice settings, it seems apparent that vacancies for pharmacists remain unfilled for prolonged periods of

Table 2.
Review of the Type of Residencies Recognized by the American Society of Health-System Pharmacists

	Total No. of Residencies	Total No. of Participants in Residencies
Clinical pharmacokinetics practice	1	1
Critical care pharmacy practice	16	21
Drug information practice	33 ^a	42
Geriatric pharmacy practice	13	18
Infectious diseases pharmacy practice	6	6
Internal medicine pharmacy practice	6	7
Managed care pharmacy practice	2	4
Managed care pharmacy systems	3	4
Nuclear pharmacy practice	2	3
Nutrition support pharmacy practice	5	5
Oncology pharmacy practice	15	22
Pediatric pharmacy practice	19	29
Pharmacotherapy practice	3	4
Pharmacy practice	248 ^b	668
Pharmacy practice (with emphasis on community care)	3	7
Pharmacy practice (with emphasis on home care)	2	2
Pharmacy practice (with emphasis on long-term care)	0	0
Pharmacy practice (with emphasis on managed care)	4	6
Pharmacy practice management	10	15
Primary care pharmacy practice	54	101
Psychiatric pharmacy practice	9	17
Total	454	982

a. Two programs have an emphasis on drug information/industry focus.

b. Four programs are 24-month residencies; all the others are 12-month residencies.

time in hopes of recruiting individuals with advanced training and/or specialization rather than making better use of generalist pharmacists.

CONCLUSION

The increased emphasis on specialization and certification and the use of these criteria for increasing professional status, recognition, and income have also resulted in greater compartmentalization of predoctoral or entry-level professional degree education. Pharmacy students may get the impression that knowledge is fragmented and that the most highly specialized knowledge is the most important and has the highest value. Or are we dealing more with the seeming inflexibility of academia to adjust curricular content in such a way so as to integrate existing general pharmacy knowledge with specialized knowledge bases? What too may be society's interpretation of specialization and/or certification in pharmacy?

One aim of specialty (or certification) recognition is to ensure consumers that the professional has achieved a certain level of skill and competence and is capable of providing services at a high level. Another aim is to inform other health care professionals of the educational

and practice accomplishments achieved so that when "referrals" are made, both patients and practitioners alike know they are turning to an individual who has acquired special skills and knowledge. From the public's perspective, they generally expect members of any health profession to provide services that are seen as being prompt and compassionate in time of need. However, it must be recognized that there is no guarantee that a pharmacist who is either specialized or certified in some area of professional practice will always will use his or her skills and knowledge promptly, compassionately, and in the patient's best interest at all times. Nor can it be assumed that suboptimal patient care will be rendered by a pharmacist who is not specialized or certified in a given practice area.

Formal recognition of specialties and the proliferation of certification programs has resulted in many splits within the pharmacy profession and in professional education. Specialists in a given profession often will see the "generalist" from within their discipline in narrow terms, or may not even recognize this segment of their profession. All too often, specialists appear to forget that their profession is based on a certain core body of abilities (knowledge, skills, and attitudes) rather than an emphasis on difference and separation.⁴⁴

We live in a world of rapid change, and adaptation is a strong driving force to ensure survival and viability. From a marketing viewpoint, one can argue that in the short term, recognized specialties should fit the market, and from a long-term perspective they should fit the realities of patient's needs for those professional services. Since the 1980s, pharmacists have been making a concerted effort to adapt (somewhat spontaneously), as evident by the clinical pharmacy movement and the desire for diversification. Today, pharmacists are clearly "reprofessionalizing" themselves and seeking specialization too. Professional specialties that already exist in pharmacy are at various stages of differentiation, formation, and organization, and the manner to which organized pharmacy responds too and embraces them seems to lack the semblance of any strategic educational plan.⁴⁴

Additionally, some may hold the belief that to seek specialization is more politically expedient than to undergo reprofessionalization. However, the 1990s has clearly shown that there has been increasing societal and government interest in the areas of smoking cessation, diabetes, asthma, immunization, and hypertension, to name a few. As a result, pharmacy has adapted through the massive proliferation of certification programs to help reprofessionalize pharmacists for these areas. This is truly one way to push the pharmaceutical care message forward and to permit pharmacists to jump onto the bandwagon of professional recognition and fee-for-service while the going is good. However, there is no real organization of the competing entities who are making such programs available to pharmacist. Professional pharmacy organizations at the state and national levels are racing to develop their "certificate" programs that will enable pharmacists to "specialize" in specific areas of patient disease-state management. Uniformity among these many programs can be loosely identified, and there are no clear reassurances to place the value of one DSM certificate (ie, diabetes) ahead of a similar one obtained from competing organizational entities. It seems interesting too that the one element within organized pharmacy, namely our academic institutions, appears to be rather quiet (or slow) in developing and monitoring similar programs to pharmacists within their respective state domains. Of course this raises the question, Should the availability of specialty and certificate programs be uniquely available only through colleges and schools of pharmacy, or is it acceptable to see a myriad of professional organizations (and newly created institutes or foundations) take up of the chalice of traditional academic discipline?

Are we as a profession backing ourselves into a corner that can only result in increasing compartmentalization and fragmentation of knowledge, with a proliferation in expectations for specialization and certification (reprofessionalization) that will make it forever difficult to keep pace with growth (both professionally and socially)? Indeed, I believe that predictions by Guerrero are correct, but we will find that the discrepancies will be far greater than anyone initially believed.

The growth in specific specialty areas of practice in terms of residency and fellowship opportunities has had some bright moments over the years, but not enough of them. With some specialties, expansion of available training sites has remained stagnant, or even lost some ground (primarily due to diminishing administrative, professional, and financial support). Given the number of hospitals and tertiary patient care centers in existence today (discounting other community-based practice arenas for the moment) (see Table 1), it seems clear that pharmacy departments will be complaining of a lack of qualified "specialists" to serve in all the decentralized patient care areas that they would like to have a consistent presence in for a long time to come. We have the basic framework in place with which to move pharmacy practice and pharmaceutical care forward. What we need is to arrive at a new consensus as to how to make better use of available resources (academic, professional, and monetarily), and to do so in such a way that we assume a more objective, open-minded outlook without falling into the same old traps of our past.

Have we "put the cart before the horse"? In some respects, perhaps yes. In other situations, we appear to have yet to figure out where the horse and cart are. Many analogies can be cited to illustrate the points that have been mentioned in this article. In closing, I would like to offer a scenario that typifies many of the issues we have yet to overcome. And if money is one of several motivating factors for seeking change, then all the more so is the following scenario relevant to our discussion on specialization.

In 1987, new Medicare Conditions of Participation for Hospitals were released, citing revised federal regulations establishing the requirements that hospitals must meet to participate in Medicare and Medicaid programs. One notable area affecting pharmacy was recognition that the pharmaceutical service is responsible for drug-product control throughout the institution—this would obviously include diagnostic imaging drugs such as radio pharmaceuticals and radiopaque contrast media. Noted in this regard was

also new language that stated “in order to provide patient safety, drugs and biologicals must be controlled and distributed in accordance with applicable standards of practice.” The other new item was specifically aimed at nuclear pharmacy, but clearly had importance for pharmacy too. It was now noted that nuclear medicine services, when provided by the facility, require the in-house preparation of radiopharmaceuticals by or under the direct supervision of an appropriately trained pharmacist or a doctor of medicine or osteopathy. This new rule, as distinguished from the pharmaceutical-services provision, requires that such products be prepared under “direct supervision,” probably limiting the use of technicians in this area. The new standard also requires that this pharmacist be “appropriately trained,” thereby strengthening the role of the specialist in this area.⁴⁷

Compare the seeming impact of this language as it pertains to nuclear pharmacy, to that emanating from Congress 2 years ago involving pharmacy services with respect to diabetes. Pharmacy certainly jumped on the diabetes bandwagon fast enough but has yet to grasp the similarly high impact that this new language relative to Medicare could have, as noted above. Instead of a proliferation of new education and training opportunities in nuclear pharmacy for pharmacy students and young practitioners from our colleges and schools of pharmacy, or other parties, except for a few notable exceptions, we have seen either their continued silence or have curtailed the activity of some programs. Over the years, there have been many articles appearing in the pharmacy literature, as well as presentations at organized pharmacy meetings, focused on the justification for hospital-based nuclear pharmacy services and corresponding pharmaceutical care initiatives.⁴⁸⁻⁵¹ Yet fewer than 50 to 75 hospital-based pharmacy programs across the country have risen to the challenge in this nontraditional area of pharmacy practice.

We have seen efforts taken within organized pharmacy to adopt policy and position statements supportive of various facets of nuclear pharmacy. Recently, the ASHP released through its Commission on Therapeutics a draft ASHP Therapeutic Statement on the Safe and Appropriate Use of Iodinated Contrast Agents, which would imply a strong desire on the part of the ASHP to establish professional bridges with radiology.⁵² Yet the fact remains, where were the knowledgeable pharmacists going to come from to establish and maintain professional services with respect to this major class of pharmaceutical product when there is extremely limited opportunity for any educational or experiential training in this area—at either the undergraduate or postgraduate levels?

Professionally, we are on the right road to meet both practice expectations and society/health care demands for the future. What is needed, however, is a thorough reassessment of current postures and positions and an establishment of new common ground whereby a reallocation of available resources and an attainment of realistic, objective goals for specialization and certification (reprofessionalization) can be achieved. Indeed, it is essential that organized pharmacy be clear on what constitutes general practice and how this can best serve as an easy platform to encourage the development of specialties that will complement and strengthen general practice.

I do not believe that pharmacy's academic institutions should say that their *only* purpose is to prepare pharmacists to be “generalists,” and to expect that private industry, professional associations, and other third parties be solely responsible for developing the advanced training programs that will lead to specialization. As already pointed out, most pharmacy schools have ignored the responsibility of preparing pharmacy students and practitioners about the nature of pharmaceuticals used in diagnostic [medical imaging/testing] applications. This is not the only area that is being overlooked today. Can we continue to pick and choose those areas of medicine and pharmacy that we believe are deserving of our professional attention and educational focus while thinking that it is “someone else's” worry to fill the void if so desired? I think not.

We must not stifle pharmacy's ability to reach all areas of health care and patient needs with ease, and in a manner that does not create a plethora of elitist-like residency, certificate, and specialty training programs. With sounder strategic planning at all levels, pharmacy can effectively meet the challenges and opportunities within health care for the future.

REFERENCES

1. Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. *Am J Hosp Pharm.* 1990;47:533-543.
2. Zilz DA. Diagnostic and therapeutic immunology—pharmacy practice implications for the future. *AACP News.* 1987;3:17.
3. Heske SM, Hladik WB, Laven DL, et al. Status of radiologic pharmacy education at colleges of pharmacy. *Am J Pharm Educ.* 1996;60:152-161.
4. ASHP Reports. ASHP statement on the pharmacist's responsibility for distribution and control of drug products. *Am J Hosp Pharm.* 1992;49:930.
5. ASHP Reports. ASHP guidelines on a standardized method for pharmaceutical care. *Am J Health-Syst Pharm.* 1996;53:1713-1716.
6. ASHP Reports. ASHP guidelines: minimum standard for pharmaceutical services in ambulatory care. *Am J Health-Syst Pharm.* 1999;56:1744-1753.

7. ASHP Reports. ASHP guidelines on the pharmacist's role in the development of clinical care plans. *Am J Health-Syst Pharm*. 1997;54:314-318.
8. ASHP Reports. ASHP statement on the role of the pharmacist in patient-focused care. *Am J Health-Syst Pharm*. 1995;52:1808-1810.
9. Joint Commission on Accreditation of Healthcare Organizations. *Joint Commission on Accreditation of Healthcare Organizations—Accreditation Manual for Hospitals*. Chicago, IL: Joint Commission on Accreditation of Healthcare Organizations; 1990.
10. Glatcz G Jr, Ponto JA, Hladik WB. Potential role of hospital pharmacy in the handling and distribution of diagnostic radiopharmaceuticals. *Am J Hosp Pharm*. 1990;47:1628-1632.
11. Laven DL. Protecting the pharmacist's professional prerogatives. *Am Pharm*. 1988;NS28(11):66.
12. Laven DL. Pharmacy practice should include diagnostic drugs: a nuclear pharmacist's opinion and commentary. *J Pharm Pract*. 1990;3(6):v-x.
13. Shaw SM. Diagnostic imaging and pharmaceutical care. *Am J Pharm Educ*. 1994;58:190-193.
14. Thrall JH, Swanson DP. Pharmacist's involvement in departments of radiology. *Admin Radiol*. 1987;5:34-35.
15. Swanson DP. An institutional approach to developing guidelines for the use of low-osmolality contrast agents. *Appl Radiol*. 1988;5:27-28.
16. Swanson DP, Jurgens RW. Radiopaque contrast media: the role of the pharmacist. *J Pharm Pract*. 1989;2:162-170.
17. Cetron M. 71 trends that will affect the medical profession into the twenty-first century. In: *Into the 21st Century*. Bethesda, MD: World Future Society; 1988:1-12.
18. Laven DL, Hladik WB. Pharmaceutical care and diagnostic pharmaceuticals: patient care avenues not to be overlooked. *J Pharm Pract*. 1994;7(3):79-83.
19. APhA House of Delegates. *Drug-Use Control by Pharmacists for All Prescription Drugs*. Washington, DC: American Pharmaceutical Association; 1989.
20. American Pharmaceutical Association. *Mission Statement for the Pharmacy Profession*. Washington, DC: American Pharmaceutical Association; 1990.
21. APhA House of Delegates. *The Pharmacist's Role in Therapeutic Outcomes*. Washington, DC: American Pharmaceutical Association; 1992.
22. APhA House of Delegates. *The Pharmacist's Role With Diagnostic Drugs in Therapeutic Outcomes*. Washington, DC: American Pharmaceutical Association; 1993.
23. American Pharmaceutical Association. *The Role of the Pharmacist in Comprehensive Medication Use Management*. Washington, DC: American Pharmaceutical Association; 1992.
24. American Pharmaceutical Association. *Principles of Practice for Pharmaceutical Care*. Washington, DC: American Pharmaceutical Association; 1996.
25. American Association of Colleges of Pharmacy. *Background Paper I: What Is the Mission of Pharmaceutical Education?* Commission to Implement Change in Pharmaceutical Education special report. Alexandria, VA: American Association of Colleges of Pharmacy; 1990.
26. American Association of Colleges of Pharmacy. *Background Paper II: Entry Level, Curricular Outcomes, Curricular Content and Educational Process*. Commission to Implement Change in Pharmaceutical Education special report. Alexandria, VA: American Association of Colleges of Pharmacy; 1991.
27. American Association of Colleges of Pharmacy. *Background Paper III: The Responsibility of Pharmaceutical Education for Scholarship, Graduate Education, Fellowships, and Postgraduate Professional Education and Training*. Commission to Implement Change in Pharmaceutical Education special report. Alexandria, VA: American Association of Colleges of Pharmacy; 1993.
28. American Association of Colleges of Pharmacy. *AACP's Strategic Plan*. American Association of Colleges of Pharmacy special report. Alexandria, VA: American Association of Colleges of Pharmacy; 1996.
29. American Association of Colleges of Pharmacy. *The Center for the Advancement of Pharmaceutical Education—A Core Strategy for the 21st Century*. American Association of Colleges of Pharmacy special report. Alexandria, VA: American Association of Colleges of Pharmacy; 1993.
30. American Association of Colleges of Pharmacy. *A Position Paper—Maintaining Our Commitment to Change*. Commission to Implement Change in Pharmaceutical Education special report. Alexandria, VA: American Association of Colleges of Pharmacy; 1997.
31. American Council on Pharmaceutical Education. *Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree*. Chicago, IL: American Council on Pharmaceutical Education; 1997.
32. American Association of Colleges of Pharmacy. *Approaching the Millennium: The Report of the AACP Janus Commission*. American Association of Colleges of Pharmacy special report. Alexandria, VA: American Association of Colleges of Pharmacy; 1997.
33. Shane R, Gouveia WA. Developing a strategic plan for quality in pharmacy practice. *Am J Health-Syst Pharm*. 2000;57:470-474.
34. Zunker RJ, Carlson DL. Economics of using pharmacists as advisers to physicians in risk-sharing contracts. *Am J Health-Syst Pharm*. 2000;57:753-755.
35. Schneider PJ. Five worthy aims for pharmacy's clinical leadership to pursue in improving medication use. *Am J Health-Syst Pharm*. 1999;56:2549-2552.
36. Weideman RA, Bernstein IH, McKinney W. Pharmacist recognition of potential drug interactions. *Am J Health-Syst Pharm*. 1999;56:1524-1529.
37. Laven DL, Shaw SM. Detection of drug interactions involving radiopharmaceuticals: a professional responsibility of the clinical pharmacist. *J Pharm Pract*. 1989;2:287-298.
38. Holland RW, Nimmo CM. Transitions: part 1: beyond pharmaceutical care. *Am J Health-Syst Pharm*. 1999;56:1758-1764.
39. Nimmo CM, Holland RW. Transitions in pharmacy practice: part 2: who does what and why. *Am J Health-Syst Pharm*. 1999;56:1981-1987.
40. Holland RW, Nimmo CM. Transitions in pharmacy practice: part 3: effecting change—the three-ring circus. *Am J Health-Syst Pharm*. 1999;56:2235-2241.
41. Nimmo CM, Holland RW. Transitions in pharmacy practice: part 4: can a leopard change its spots? *Am J Health-Syst Pharm*. 1999;56:2458-2462.
42. Nimmo CM, Holland RW. Transitions in pharmacy practice: part 5: walking the tightrope of change. *Am J Health-Syst Pharm*. 2000;57:64-72.
43. Woodward JMB, Brazeau GA, Leader WG, et al. Report of the COF task force on professional socialization. *Am J Pharm Educ*. 1997;61(suppl):31S-34S.
44. Directions for specialization in pharmacy practice: part 1: proceedings of an invitational conference sponsored by the American Association of Colleges of Pharmacy, the American College of Clinical Pharmacy, the American Pharmaceutical Association, and the American Society of Hospital Pharmacists. *Am J Hosp Pharm*. 1990;48:469-500.

45. Goldenson RM, ed. *Longman Dictionary of Psychology and Psychiatry*. New York, NY: Longman; 1984.
46. 1999 ASHP National Residency Preceptors Conference: mentoring for excellence. *Am J Health-Syst Pharm*. 1999;56: 2454-2457.
47. Liang FZ, Greenberg RB, Hogan GF. New Medicare conditions of participation for hospitals. *Am J Hosp Pharm*. 1987;44:1119-1122.
48. Laven DL, Martin WR. Justification for hospital-based nuclear pharmacy services. *J Pharm Pract*. 1989;2:152-161.
49. Laven DL. Nuclear pharmacy—potential roles for the technician. *J Pharm Technol*. 1987;3:24-33.
50. Wolf W, Kawada TK. Radiopharmacists do more than prepare and dispense products. *Am J Hosp Pharm*. 1988;45:1866-1867.
51. Swanson D. Pharmacy services to a radiology department—professional: regulatory and economic considerations. Presented at: 121st Annual ASHP Midyear Clinical Meeting, American Society of Hospital Pharmacists; December 7-11, 1986; Las Vegas, NV.
52. ASHP draft therapeutic position statement on the safe and appropriate use of iodinated contrast agents. Personal communication: Charles E. Myers, American Society of Health-System Pharmacists; 1999; Bethesda, MD.