The Evolution of the Doctorate of Physical Therapy: Moving beyond the controversy

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A great deal of debate has surrounded the newest professional (entry-level) degree in physical therapy, the Doctorate of Physical Therapy (DPT). This article provides a historical view of the evolution of physical therapy education from its earliest technical roots to the current status it holds within academia. Political, social, and economic factors that have influenced the growth of the field and the development of physical therapy education are explored to give perspective to the transition to an entry-level DPT degree. A presentation of different viewpoints on controversial issues surrounding the DPT highlights the challenges currently facing the profession, which the adoption of new entry-level educational standards may address. Weighing the historical advances of the field with consideration of the challenges today's health care environment present, the authors recommend elevating the rigor of entry-level educational standards and validating academic outcomes to support the credibility of the DPT.

INTRODUCTION

The current movement toward a professional (entry-level) doctoral degree in physical therapy has engendered excitement in some members of the profession and skepticism in others. Some physical therapists are excited by the prospect of holding a doctoral degree, while others are concerned that their present credentials will not equal those of a new graduate with a Doctor of Physical Therapy (DPT) degree. Some practitioners look forward to the prospect of greater respect from health care professionals and insurance representatives and to the potential for fully autonomous practice, while others are skeptical that a new degree will improve entry-level preparation or provide the increased skills necessary to meet today's clinical challenges. These differences in opinion are apparent in letters to the editor in professional publications as well as debates in clinics around the country, demonstrating that there is no clear consensus, hut rather continued controversy, surrounding the definition and potential benefits of the DPT degree.1,2

Nevertheless, movement toward accepting the DPT degree as the entry-level degree is occurring much more rapidly than past transitions in physical therapy education. In October 1999, 8 entry-level DPT programs had been accredited, 17 were developing or in the process of making the transition to DPT programs, and 18 to 20 were in the process of deciding to transition.1,2 Less than 2 1/2 years later, the American Physical Therapy Association (APTA) reported that 42 entry-level DPT programs were accredited, 12 were developing or in the process of making the transition to DPT programs, and another 46 were in various stages of discussion or planning to transition to entry-level DPT programs.3 The Vision Statement endorsed by the APTA House of Delegates (APTA-HOD) in June 2000 also states that by 2020 physical therapy services will be provided by doctors of physical therapy.4 In 1999, citing the number of programs currently contemplating the transition, Joseph Black, Director of the Education Division of APTA, stated that the question is no longer whether the DPT is appropriate, but rather how the profession can make the transition smooth and beneficial.2

During these times of change, examining the history of physical therapy and physical therapy education may help physical therapists decide how to proceed. The field of physical therapy emerged from the great demand for physical rehabilitation resulting from worldwide medical crises, and continuing demand for services stimulated further growth of the field. Sociopolitical influences, including public views of health, legislation expanding the breadth of health care, and public funding for health education and services, have broadened the reach and responsibilities of physical therapists. All the while, major technical advances in medical care have led to an increase in the depth of knowledge and level of skill required of physical therapists. Academic standards required for entry into the profession have evolved concurrently with physical therapy practice. Educational standards have progressed from oversight by individual physicians to accreditation by medical doctors and finally to standard regulation by physical therapists. The progression of educational standards parallels the expansion of physical therapist duties from technical skills such as exercise and massage to the examination and evaluation of individuals with multisystem problems and the provision and supervision of all interventions within the plan of care. When considered in a historical context, is the DPT the next logical progression in the evolution of physical therapy education?

PURPOSE

We will provide a historical perspective on the evolution of the DPT, detailing the progression of entry-level preparation as well as the historical events and educational advances that influenced the growth and development of physical therapy. This historical perspective serves as the framework through which controversial issues surrounding the DPT degree are explored. We suggest that all those involved in the physical therapy profession should critically consider what educational standards for a new entry-level physical therapy degree will be sufficient to meet current and future challenges of the profession and uphold the responsibility that comes with adopting the title "Doctor of Physical Therapy."

THE EVOLUTION OF PHYSICAL THERAPY EDUCATION

Establishing Certificate Programs: 1900-1930

Historical Influences. Two worldwide calamities created domestic health crises that catalyzed the formation of the new occupation of physical therapy. First, the multiple poliomyelitis epidemics between 1894 and 1916 left many paralyzed and debilitated, requiring extensive muscle retraining. This was particularly prevalent in the New England states.5 Second, the violence of World War I (1917-1919)6 left over 200,000 Americans wounded and in need of rehabilitation to restore them to optimal function in a newly industrialized economy.7-9

During World War I, prevailing national security interests made preserving a physically able fighting force of paramount importance. Armistice, however, shifted the national focus toward peacetime industrialization and economic expansion, which was in keeping with the work ethic and the social mores of the time. Emphasis shifted from the treatment of war casualties to the treatment of a civilian workforce. Physical fitness programs were initiated to improve workforce efficiency and "economic usefulness."10(p33) In addition, state legislation was

enacted to provide for the treatment of children who were crippled, underscoring the importance of rehabilitation as a means of helping children with disabilities become useful members of society.5,10 It was from the crucible of these world events that the field of physical therapy was born.

Educational Advances. Individual practitioners led education in the emerging field of physical therapy. In response to the poliomyelitis epidemics of 1914 and 1916, Robert W Lovett, a Boston orthopedic surgeon, began organizing and training teams of individuals in his therapeutic approach to the treatment of children with poliomyelitis. Lovett started providing specialized training in massage, muscle training, and corrective exercise at Sargent College in Boston. A few notable women, including Wilhelmine Wright, came to Lovett with prior backgrounds in massage, exercise, and physical education.5 These women became instrumental in providing follow-up care for the many with "infantile paralysis" and later became the pioneers of the field of physical therapy.5-10

The demand for physical therapy services grew dramatically during and after World War I and required ongoing training of practitioners to address the physical needs of the many wounded. Spurred on by the pressing needs of its fighting forces, in 1917, the US Army created a formalized training program with the newly established Division of Special Hospitals and Physical Reconstruction, in the Office of the Surgeon General, as its overseer. These 3-month emergency education programs required previous high academic standing in a physical education program, with concentrations in anatomy and exercise.5,9 Graduates of these programs, as well as those recruited to provide service in the military, were given the official title of 'Reconstruction Aide," while practitioners who remained in civilian facilities held a variety of titles, including "Physiotherapy Technician," "Physical Therapy Aide." and even "Physician's Assistant."8,9

Civilian attempts to establish training programs consistent with those of the Army led to the advent of certificate-granting programs, which were generally housed in hospitals where the need for physical therapy was most acute. Collaborating with the Army, 13 schools established short, intensive, certificate-granting physical therapy programs by 1918. These training programs consisted of 6 months, or 620 hours, of technical-level course work in anatomy, physiology, massage, hydrotherapy. electrotherapy, and exercise. The substantive elements of the early curriculum placed the greatest weight on the study of technical skills as opposed to academic foundations.10

Although the occupation of physical therapy had been established, few regulations were placed on the quality of its educational preparation or practice. With an estimated 800 reconstruction aides or physical therapy technicians serving in the Army Medical Department, most of them graduates of these short courses,9 the lack of quality control threatened further development of the field. In 1921, with labor becoming increasingly organized and the women's suffrage movement progressing, the American Women's Physiotherapy Association (AWPA) was born, which in 1922 changed its name to American Physiotherapy Association (APA).7 This nascent association of physical therapists, a precursor to the American Physical Therapy Association (APTA), established the first minimum standards of the profession in 1928: the Minimum

Standards for an Acceptable School for Physical Therapy Technicians.5 The minimum standards included a 9-month, 1,200-hour program of instruction, with the prerequisite for admission being graduation from a recognized school of physical education or nursing.10 Although the APA established educational standards, the newly established association had no mechanism for implementing these standards?

Curricular standards for the 12 institutions that offered programs in physical therapy in 19.40 varied significantly. Cluck hours ranged from 565 to 1,411, and program length ranged from 4 to 18 months. All hut one of the programs offered a certificate at the end of the course of study.10 The varied curricula resulted from the special interests and particular needs of the physicians teaching the courses, the types of settings within which the programs were established, and the occupational roles expected of the graduates.10 The focus of these early programs was on technical training and skills, which provided a rationale for granting certificates.10 However, even as early as 192H, some argued that entrance into the field should require more than just technical training, that the minimum requirement for entry into the field should be a 4-year university degree with a course of study that included liberal arts and sciences.7 In September of 1927, Mew York University (NYU) became the first program to offer a baccalaureate degree, which coexisted with its 9-month certificate program?

Transition From Certificate to Baccalaureate Programs: 1930-1950

Historical Influences. World War 11 (19411945)6 ravaged the world's armed forces again, and this, along with the extended poliomyelitis epidemics, kept demand for physical therapy exceptionally high. In the early 1940s, the shortage of physical therapists was so acute that the ratio of therapist to patients was as high as 1:250.7 As a result, the 1930s and 1940s were decades of continued expansion and growth for the Geld of physical therapy.8

Political and social responses to world events accelerated the growth of physical therapy and eventually led to an expansion of physical therapy beyond hospital-centered practice. Franklin Delano Roosevelt was elected president and perhaps, in part, because he had poliomyelitis, greater attention was placed on disabilities. During this time, significant legislative changes occurred, which greatly influenced the delivery of physical merapy services. For example, the Social Security Act of 1935 required each state to broaden its services to children with poliomyelitis and other disabling disorders. As a result, in 1939 alone, physical therapists provided over 350,000 treatments to children with disabilities/ Therapists' roles expanded into outpatient centers, homes, convalescent homes, orthopedic hospitals, schools for children with disabilities, and higher education settings.7

Educational Advances. The expanding breadth of physical therapy practice settings beyond the hospital made establishing and enforcing minimum standards for physical therapy education critical. The idea of adopting a 4-year preparatory college program, which would have significantly increased the qualifications, standards, and recognition of physical therapists, was considered.7,10 However, in 1938, unable to agree on minimum standards for education and constrained by limited resources, the APA asked the American Medical Association (AMA) to assume responsibility for accrediting physical therapyschools.8,10 In 1936, the AMA

established the Essentials for an Acceptable School for Physical Therapy Technicians, and the first 13 institutions were accredited.7,10

While the earliest physical therapy programs reflected the specific interests and needs of a particular location, programs now strove for standardization and accreditation.10 The AMA Kssentials became the benchmark for developing programs. The Essentials established 9 criteria for accreditation, organization, faculty, plant, clinical faculties, resources, administration, requirements for admission, publications, and minimum curriculum.10 The minimum standard for acceptance into physical therapy programs set by the AMA included: 60 college credits or graduation from a 2-year school of nursing or physical education. Additionally, the length of time required for completion of the minimum curriculum was increased to a range of 12 to 24 months.7,10

Regardless of the new educational standards, the shortage of physical therapists during World War II heightened the demand for the short emergency programs, which served to maintain the certificate-granting program as the dominant model for physical therapy education.10 Although many programs were beginning to offer degrees, certificates continued to be available to those who completed the 9 month training programs.8 Of the 54 physical therapy programs that developed from 1930 to 1950, 35 offered certificates, 18 offered eimer a certificate or a baccalaureate degree, and 1 offered solely a baccalaureate degree.7,10

After World War II, the Essentials began to be applied more uniformly, and the baccalaureate degree was granted with greater frequency. Financial aid resources, including the GI Bill and scholarships from the National Foundation for Infantile Paralysis, became increasingly available to support higher education and accelerated the degree-granting trend.8,10 Although, in the 1940s, only 17 programs offered the baccalaureate degree, by the 1950s, 37 programs offered this degree.10 The fact that most newly established programs were situated in colleges and universities as opposed to hospitals reflected the increasing academic element to physical therapy education J Meanwhile, recognizing that there were levels of physical therapy education beyond the entry level, NYU established the first advanced master's degree program in 1942.7,10

Baccalaureate Degree as Educational Standard: 1950-1980

Historical Influences. Health calamities continued to create great demand for physical therapy services. The poliomyelitis epidemic of 1950 was one of the largest in the United States. Although the Salk vaccine of 1955 diminished the number of people who contracted poliomyelitis, the need for restorative care continued. The 100,000 wounded American veterans of the Korean War, including many with lower-limb amputations, as well as those wounded later in Vietnam, increased the already high demand for physical therapy services.7

During the same period, significant advances in medical technology, such as heart transplants and joint replacements, forced physical therapists to assume a broader range of responsibilities and expand into the more complex areas of cardiopulmonary dysfunction and advanced orthopedic disorders.8 Although the Salk vaccine reduced the incidence of

poliomyelitis, originally an impetus for the creation of physical therapy, physical therapists were already treating a diverse patient population using a repertoire of techniques, including those based on neuromuscular physiology.5,7,9

Social and political changes of the period also helped shape the growth of physical therapy. Demographics of the 1950s and 1960s showed the elderly population doubling." In response to the physical needs of elderly people, federal legislation recognized physical therapy as part of the Medicare and Medicaid programs under the Social Security Act, which again increased the demand for physical therapists.7 To address the growing demand for physical therapists, the Allied Health Professions Personnel Training Act of 1966 (Public Law 89-751) specified physical therapy as a profession that would qualify institutions for additional financial aid.10

The Public Health Service began to view national comprehensive medical services, including physical therapy, as one of its missions.7 Other key social and political changes affecting the expansion of both public health services and physical therapy services included the Hill-Burton Act of 1975," the creation of the Department of Health and Human Services in 1979.12 and the development of the Office of Vocational Rehabilitation.7,13 The public at large became much more health and fitness conscious, and the emerging social and political perspective of many Americans was to view health care as a right for all citizens, not a privilege.7

Educational Advances. New patient populations with more complex medical needs required an elevation of the training standards for physical therapists beyond the technical aspects of massage, therapeutic exercise, and modalities. By the 1960s, physical therapy interventions were more comprehensive and complex, requiring advanced problem-solving and analytical skills.9 Schools tenaciously worked toward establishing new programs with an increasing breadth and depth of curriculum beyond that of the more technical certificate-granting programs.10 Content areas such as neuroanatomy, neurophysiology, psychology of people with disabilities, research, education, administration, and public health, which together form the foundation for understanding pathology and treatment rationales, became commonplace alongside the traditional classes of anatomy, physiology, and modalities.10

At the same time, APTA strove to enhance educational standards, and with the expansion of the role of the physical therapist, questions regarding the minimum standards for accreditation were raised again.10 The APTA advocated for elevation of the standard of physical therapy education to a 4-year entry-level baccalaureate degree, seeking support of the program directors who were able to exert great influence on the programs being developed and degrees being offered.10 Although revisions of the Essentials in 1955 did not include the APTA proposal to move to baccalaureate minimum qualifications, they did identify the need for a thorough understanding of pathology and treatment rationales as well as comprehension and performance of technical skills.7 It was not until 1960 that the APTA-HOD passed a resolution that the baccalaureate degree be the minimum educational qualification of the physical therapist.14

During the deliberations that led to the minimum standard of a baccalaureate degree, some had already begun to argue that the way to upgrade the field was to require a master's degree

for entry into the field of physical therapy.'" Issues under consideration at the time included whether the preparation of physical therapists must include prerequisite undergraduate studies, whether initiation of entry-level master's degree programs would elevate physical therapy to the level of a profession, and whether the growing breadth and depth of the body of knowledge and skills of the field required substantive curricular changes and warranted the conferral of a higher degree.7,10 Just as the APTA-HOD adopted the baccalaureate degree as the minimum standard, case Western Reserve University initiated the first entry-level master's degree program." By 1979, APTA had adopted a resolution to require a postbaccalaureate degree to enter the Geld, starting in 1990.15

Increases in financial aid available for physical therapists expanded the number of higher educalion institutions offering physical therapy programs, expediting the shift from hospital-based programs toward those affiliated with or housed in institutions of higher education.10 By 1970, most programs were affiliated with colleges or universities; the number of certificate-granting programs shrank to 15 in 1972 (from 32 in 1950), while the number of baccalaureate level programs increased to 55 in 1972 (from 37 in 1950).10 Because certificates, baccalaureate degrees, and master's degrees were all possible entry points to the field, program lengths varied from 12 months to 4 years, exclusive of prerequisite course work.10

Demonstrating that the knowledge and skills of physical therapists had advanced beyond those of technicians, physical therapists were joined in the field by physical therapist assistants in the late 1960s. The physical therapist assistant was trained as a technician to perform many of the original tasks of the physical therapist, which afforded the physical therapist increased time for the higher-level skills of decision making, problem solving, and patient management.7 The advent of the physical therapist assistant was concomitant with a recognition that advanced educational development was needed for physical therapists. Advanced education programs that offered master's degrees were founded for practicing physical therapists, and in 1973, MYU opened the first post-professional PhD program in the United Stales.7 In addition, in 1978, APTA initiated action to establish the first specialist certification program for physical therapists who demonstrated advanced clinical knowledge, experience, and skills In specific practice areas, which resulted in recognition of the first clinical specialist in cardiopulmonary physical therapy in 1985.5,16

Transition to the Post-Baccalaureate Degree Requirement: 1980-Present

Historical Influences. While major worldwide health crises drove physical therapy beyondits earliest roots, legislative and health care industry changes have guided expansion of the field in the last 2 decades. A number of federal laws have extended the reach of physical therapy. Federal legislation (PL-94-142) brought physical therapists into the public school settings to provide support services to children with disabilities.8 The enactment of the Americans With Disabilities Act (ADA) created a niche for physical therapists as consultants and advocates.17 Services such as provision of primary care, work capacity analysis, safety and conditioning programs, and fitness and prevention programs have all added to the expanding role of the physical therapist.17

As the range of physical therapy services grew, clinical practice moved farther from its hospital hase and more toward independent private-based practice. By the end of the 1980s, over 50% of active physical therapists were working outside hospital settings.5 The 1981 revision of the APTA Code of Rthics dropped the stringent delineation of physician responsibility for diagnosis, physical therapy treatment, and discharge while pressing for greater responsibility for professional judgment.5 This, in combination with the trend toward independent practice, led the efforts to change state legislation to allow for practice without referral.19 To date, the US military18 and 34 states allow physical therapists to practice in this autonomous manner.19

Fueled by the identification of post-polio syndrome and then the acquired immunodeficiency syndrome (AIDS) vims, demand for physical therapists in the 1980s continued to outweigh supply.8 However, more recent changes in health care delivery systems have altered this familiar landscape. Insurance industry reforms aimed at reducing the cost of health care delivery have become an enduring force influencing the provision of medical care, including physical therapy. These changes are seen, for example, in the rapid reduction in the length of hospital stays or reductions in reimbursement for specific modalities.20 Various alternatives to insurance and medical organizations, such as diagnosisrelated groups, prospective payment systems, managed care, and point-of-scrvice plans, limit the provision of physical therapy services. Accountability, quality assurance, utilization, productivity, capitation, efficiency, and cost-cutting measures have all become ubiquitous and powerful elements of physical therapy practice8 that dampen demand for physical therapy services despite ever-expanding patient populations and practice settings.

As a result of insurance industry-imposed limits and a sharp increase in the utilization of physical therapist assistants and foreign-trained physical therapists, a surplus of physical therapists emerged for the first time in the history of the profession.21 Reports that the supply had begun to outpace the demand for physical therapists surfaced in the late 1990s. The Workforce Study commissioned by APTA noted an expected 20% to 30% surplus of physical therapists by the years 2005 to 2007.21 Considering the sharp increase in the utilization of physical therapist assistants and foreign-trained physical therapists with the cutbacks noted in the managed care environment, it was reported that this surplus could potentially be even greater.21 While not all of the assumptions and predictions of the Workforce Study were accurate (eg, assuming the rate of increase in physical therapy schools and the spread of the California model of managed care),21 a surplus did emerge. Despite a recent employment survey bom APTA dial repoils improvement in the employment outlook for physical therapists,22 the impact of this economic factor has begun to show in both the decline in applicants to schools and in the number of jobs available for newly graduated therapists.17,23

Educational Advances. Initial attempts to upgrade the minimum entry-level requirements from baccalaureate to post-baccalaureate degree, generally assumed to be a master's degree, met with considerable resistance. Although the resolution (RC14-79) to require an entry-level post-baccalaureate degree for physical therapists by 1990 passed in the APTA-HOD in 1979,7,8,24 the decision met with strong opposition from many throughout the next decade, including APTA members and university leaders.15 Opponents cited the insufficient supply of trained

faculty, educational funds curtailed by inflation, shortage of therapists, and the uncertain impact of pending health care reforms as reasons not to require a higher degree. No consensus could be reached on the type of educational preparation necessary, and in 1988, the resolution was abandoned. It was not revived again until 1999 when Ae APTA-HOD finally passed a resolution requiring that all entry-level programs be at a post-baccalaureate level3,15,25 in order to meet the needs of more comprehensive and complex practice.

To clearly articulate the comprehensive role of the physical therapist for the first time, APTA published the Guide to Physical Therapist Practice in 1995. The Guide ("Volume I; A Description of Patient Management") was published in the August 1995 issue of Physical Therapy, and volumes I ("A Description of Patient Management") and II ("Preferred Practice Patterns") were published in November 1997. Revisions to the Guide based on APTA-HOD policies were published in the June 1999 and November 1999 issues of Physical Therapy, and a second edition of the Guide was published in January 2001.26 A culminating work of experts in the field, the Guide thoroughly describes the physical therapist's role in the examination, evaluation, diagnosis, prognosis, program planning and design, patient education, and case management in all domains of physical therapy practice, including the musculoskeletal, cardiopulmonary, integumentary, and neuromuscular systems.7,26 The Guide reflects the expansion of physical therapy practice and education into health maintenance, fitness, and disease prevention, as well as restoration of function across the life span. The vast scope of practice and the current emphasis on a review of all systems requires reasoned clinical judgment ground in a broad knowledge and skill base to intervene in complex medical problems.

Regulation of physical therapy programs wax also updated to give physical therapists sole responsibility for their own educational accreditation process and raise the level of training required for entry into the profession. While the Council on Postsecondary Accreditation and the US Commissioner of Education granted recognition to APTA as an accrediting body in 1977, it was not until 1983 that the AMA withdrew, leaving the Commission on Accreditation in Physical Therapy Education (CAPTE) of APTA solely responsible for accrediting all physical therapy programs.7 This change effectively nullified the AMA Essentials.24 Standards for entry-level physical therapy programs have since been elevated by CAPTE, which ceased to accredit all programs not granting a post-baccalaureate degree in January 1, 2002.3 It has been over 20 years since APTA first resolved to upgrade entry-level education to the post-baccalaureate level, which was generally assumed to be a master's degree level. Just as this transition has come to fruition, some programs have begun granting another post-baccalaureate degree, the DPT.27

Introduction of the DPT. Even as new entry-level standards were being adopted, some had already begun to look toward the professional doctorate as being the entry-level degree of the profession. In 1992. the University of Southern California initiated the first post-professional "transitional" (DPT) program in the United States. This "transitional" DPT takes into account a therapist's current level of knowledge and skill and purports to offer programs that upgrade clinical skills to meet the needs of the current health care environment.1,28 Creighton University followed by initiating the first entry-level DPT program in 19937 Once again,

multiple education programs exist for those entering the Geld of physical therapy, with certificates, baccalaureate degrees, master's degrees, and now doctoral degrees all being granted.29 As shown in the next section, many propose that the DPT be the new entry-level degree for the profession, while others consider a new entry-level degree unnecessary. The periodic debate over the proper qualifications and educational standards required for professional performance at the entry level of physical therapy has surfaced once again. Table 1 provides a summary of the history of the profession of physical therapy and its educational advancements.

THE DPT: CONTROVERSIAL ISSUES

Articles, editorials, and letters to the editor, both in favor of and against the DPT as the entry-level degree, have emerged in physical therapy professional journals2,23,25,27,29-48 and demonstrate that no consensus has been reached regarding the need for the DPT.28 The following section presents varying perspectives on controversial issues that have been raised regarding the transition to the DPT degree.

Degree Confusion and Inflation

A multitude of entry-level degrees are available to designate a graduate of a physical therapy program. Over 20 years have elapsed since APTA's first resolution to upgrade the entry-level requirements from a baccalaureate to a post-baccalaureate degree, assumed by most to be a master's degree. Just as CAPTE was poised to complete this transition. DPT degrees began to be offered with increasing frequency.27 As a result, there are numerous entry-level degrees currently offered in the field of physical therapy (ie, BA, BS, MA, MS, MPT, and DPT).14 In addition, various other post-professional degrees exist, including transitional degrees as well as advanced clinical and academic degrees (ie, MS, DPT, DPTSc, DHS, DSc, PhD, and ScD).14

Because of the potential confusion for the public and the profession, some suggest that it would be irresponsible to add at this time. It is possible, however, that the addition of the DPT will add no further confusion to a profession that has experienced degree confusion for several decades.30 In fact, ever-evolving qualifications and entry-level degree requirements have led to confusion throughout the history of physical therapy. Black suggests mat if consensus can be reached regarding the DPT as the only entry-level degree, as the master's degree was once to be, the cloud of confusion will be lifted.30 Furthermore, given the advent of post-professional or transitional DPT programs, the DPT is within reach of all therapists.28

But is the addition of a DPT degree just an exercise in degree inflation? Some question whether the rigor of the physical therapy curriculum and the current scope of practice warrant the conferral of a professional degree similar to that characteristic of medicine, dentistry, or veterinary medicine.27 Perhaps the profession is accepting less stringent academic standards hy moving forward with the DPT now; if so, what will this do to the profession in the long run as it faces an ever-increasingly sophisticated health care consumer market.27 Proponents of the DPT counter that the DPT is not an example of degree inflation, hut rather that the existing curricula are "victims of 'curricular inflation.'"31(p988) As Rothstein32 and Moffat33

noted, the current master's and even baccalaureate curricula rival that of most other doctoral programs, and these curricula often require more than the typical 72 credits mandated for a doctoral degree.34 The 2000 Fact Sheet from APTA reports that the mean number of credits required for the professional phase of the typical baccalaureate program is 83.0 credits and that the typical master's degree program requires 95.5 credits.49(p11) Perhaps the important question to be posed, as Threlkeld et al31 would suggest, is: If the scope of existing physical therapy curricula already matches that of a professional doctorate, then why is it not being recognized as such?

Regardless, inconsistent use of the DPT degree is a source of growing concern to many because the DPT designation and title currently apply to graduates of any UPT program, whether entry-level, transitional, or post-professional program of advanced clinical study.35 Entry-level programs stress basic sciences and graduate clinical generalists, while advanced post-professional programs often focus on clinical skills that prepare clinicians to specialize in distinct areas of practice.35 Transitional DPT programs purport to upgrade the clinical skills of practicing physical therapists, but they are considered entry-level clinical degree programs, not advanced academic degree-granting programs.1 Using one degree title for significantly different curricula is confusing for the public and for those within the field.35

Perhaps the question of greatest importance is: How will the profession choose to define the DPT.2 Does the profession want diversity, yet congruence, like psychologists, who have 2 distinctly different degrees (ie, the PsyD, which stresses clinical practice, and the PhD. which stresses research productivity): consistency with one entry-level degree like physicians (MD), dentists (DDS), and pharmacists (PharmD). where the nomenclature is clear and consistent: or extreme diversity like nurses, who currently have S different doctoral degrees?36 If there are entry-level qualifications, as differentiated from advanced practice qualifications, how will that distinction be made clear to the public and the profession?

Professionalism and Public Image

After the standards for physical therapy education were raised in the 1955 revised Essentials, physical therapists were upgraded in the public eye from semiprofessionals to professionals, as defined in the Dictionary of Occupational Titles.10 However, the question remains whether physical therapy has fulfilled all of its responsibilities as a profession.10 Characteristics mat define professionals include rigorous training that culminates in mastery of a clear and distinct body of knowledge, expertise within and contribution to that body of knowledge, and adherence to a specific code of ethics that governs autonomous professional behavior.37 basic assumption of this definition is that the exclusive domain of a profession must provide an essential service to the public, which brings with it certain social and political responsibilities.31 The profession of physical therapy possesses most of the characteristics of a profession, although it may fall short in the areas of autonomous practice and rigorous training.38

Proponents of the DPT maintain that a doctoral degree will speed the development and acceptance of autonomous practice through an image-building process that will augment

public recognition.31,38-40 Currently, many states allow direct access to physical therapy services, although insurance providers do not routinely provide reimbursement without a physician's referral. Some believe that the conferral of a DPT degree will give the profession both the respect and bargaining power needed with third-party payers for reimbursement as well as with legislators to alter state laws. This will allow for ultimate autonomy of practice,39,40 thus enabling physical therapy to fulfill one of the elements of a true profession.31

Within the areas of rigorous training and research contributions, however, physical therapy may fall short of the expectations of a true profession.38 Some suggest that physical therapy education does not compare with that of other doctorallevel health care professions.27 Do DIT programs represent an improvement in training adequate to prepare physical therapists to carry the responsibility of primary caregivers in a direct care environment? Without required research in DPT programs, can the evidence base demanded by the public and the insurance industry he developed to support the examinations and interventions practiced? It is unclear what curhcular design is necessary to maintain public trust as we move toward more autonomous and evidence-based practice.

Some even suggest that the profession is simply trying to "buy [the] respect" of the public through the addition of doctoral credentials.41(p980) For the public, the DPT represents a major change wim regard to how physical therapists are addressed. Since the early 1920s, physical therapists have typically been addressed by name; however, a DPT degree brings with it the title of "doctor," which connotes the highest level of knowledge and competence. By conferring such a title, the profession must assume the responsibility of ensuring that the public's perception is well founded. To validate this public trust. DPT training must demonstrate substantive differences.37 Proponents of an expeditious adoption of a standard entry-level DPT point out that current physical therapy programs require more credits than some doctoral degrees mandate.34 Thus, it has been submitted that students of a well-defined DPT program will have earned the right to he recognized with the doctoral title.31

Substantive Differences and Outcome Measures

How to define the DPT degree may depend on the Substantive differences that exist between DPT programs and existing entry-level programs. Questions have been raised as to whether the DPT programs being developed offer substantive changes in their curriculum or simply make minimal alterations without a full assessment of needs, student outcomes, and overall program effectiveness.42 It is possible that some programs have transitioned or will transition to the DPT to contend with a shrinking admissions pool in a competitive higher education market without basing transitional changes on valid data.42 This raises the question: Should the profession allow education to drive practice or practice to drive education?2

Indeed, some argue that no substantive differences have been noted in the newly developed curricula.43 Modest increases in clinical affiliation time have been added, but it is not clear how much time and supervision are required to significantly upgrade the skills of a new physical therapist to address the many complex scenarios presented by exposure to direct

access. Clinical residency programs accredited by APTA, for instance, require a minimum 9 months post-entry-level, with on site supervision of a certified specialist from the American Board of Physical Therapy Specialists (ABPTS).16 This leaves the profession with the question of how much clinical experience is necessary to adequately prepare one for entry-level practice.

Many clearly support the need for valid measures of student outcomes to document measurable characteristics of the graduates of DPT programs that distinguish them from other program graduates. However, few attempts to document these measures have been noted to date.44,45 Without solid data, nothing shows that current programs are not meeting professional outcomes appropriately; thus, there is little to justify changing the education of the physical therapist.27,37,41 Messaros27 suggested that the profession needs to understand how current model programs achieve high-quality outcomes and then tighten accreditation standards to encompass such findings. It has been charged that it is the profession's responsibility to he proactive in providing valid data upon which members of the profession can do-clop informed opinions and facilitate meaningful dialogue regarding future changes.42 While most would agree that data are essential, it is argued that data cannot he acquired without graduates of DPT programs, and these graduates are only now beginning to emerge.31 Unlike the transition to the baccalaureate degree, and later the master's degree, during which decades of experience with programs granting multiple degrees provided adequate comparison, the rapid transition to the DPT has yielded little data to analyze. Perhaps further research on academic outcomes will provide validation for a new degree and title.

Education of students in a DPT program is aimed at improved critical thinking skills32 and conceptual and integrative competence.31,44 A study of employers of new graduates conducted by Bank et al45 examined differences, observed and perceived, among graduates with various entry-level degrees. These researchers reported differences in areas such as patient education, supervision of assistive personnel, and application of research findings, but they found no distinct differences in the areas of evaluation skills, interpersonal skills, treatment skills, or exhibition of professional behavior. Notably, 144 of 189 respondents to this survey stated that their degree of choice for entry into the profession was that of a master's degree.45

Some question the results reported by Bank et al,45 suggesting that perceptions of the employers may have been skewed, given the employers' limited exposure to graduates of DPT programs and the difficulty in measuring such outcomes.31,37,42 Additionally, the article by Bank et al45 is based on the employment of only 8 graduates of one DPT program. The limited sample size has been a consistent weakness of outcome studies thus far, including an article by Threlkeld et al,44 which reported on 51 graduates. Perhaps, as Tippet42 suggested, a more comprehensive view can be obtained if a national database could be established with information on the academic environment, geographic saturation of graduates and programs, and short-term and long-term cognitive and affective student outcomes.

Institutional Qualifications

An elevation of the performance expectations for OPT students raises the question of whether current institutional and faculty qualifications for entry-level programs are adequate or should also be elevated to meet higher educational expectations. Threlkeld et al44 proposed that OPT programs should he housed in institutions that maintain multiple professional doctoral programs where there is a commitment to the scholarship of discovery and production of new knowledge. These institutions generally hold a minimal Carnegie rating of Doctoral University II (Table 2).

According to Threlkeld et al,44 (p574) in 1999, only 62 of the 168 institutions offering physical therapy programs met this criterion. If a proposal such as Thrclkeld and colleagues' were to be adopted. fewer than 2 programs, on average, would he available per state, potentially limiting the geographic reach of physical therapy education.37,50 Elevating the requirements for institutions providing physical therapy entry-level education would reduce the proliferation of physical therapy programs, a recent concern expressed by APTA.51 However, reduced availability of physical therapy programs might also negatively influence minority recruitment, which continues to be an important goal of the profession,37,50 or reduce already underserved areas such as rural communities or those with economically disadvantaged or large minority populations.37 Such an institutional requirement may "unintentionally bias societal access to physical therapy."37(p984) In addition, because growth of the field has been spurred by expanding responsibilities and practice settings, such a proposal may hinder efforts to provide access to physical therapy services across the broad spectrum of current practice.

Nevertheless, a consolidation of resources and experienced faculty in institutions equipped with the resources and personnel to produce research may enhance scholarly interaction and productivity.31 Scholarly contributions are vital to the health of the profession. Additionally, reducing the number of programs in this manner would limit the number of programs with less-qualified faculty and would result in fewer graduates to meet reduced market demands.31 Proponents of reducing the number of programs counter concern for social bias with assurances that the same recruitment efforts, supports, scholarships, and loans currently used to attract a diverse student body would similarly meet the needs of the rural and minority communities.44

Faculty Qualifications

Debate regarding minimum requirements for institutions that house physical therapy programs goes hand in hand with questions about the appropriate qualifications required for physical therapy faculty. The DPT is an entry-level clinical doctorate, which does not necessarily prepare one for a faculty position or to produce the rigorous research required of an academician.25,37 Sufficient numbers of faculty and researchers with academic doctorates are essential to provide the evidence base needed to validate the efficacy of physical therapy tests and intervendons as well as continually develop curricula.52 The potential exists for the clinical doctorate to be misrepresented or misinterpreted as an academic doctorate.37

Currently, within a physical therapy faculty, individual members hold a range of academic qualifications, including clinical specialty certifications and baccalaureate, master's, entry-level DPT, professional doctorate, and PhD degrees.49 Indeed, other medical professions such as pharmacy (PharmD), medicine (MD), and dentistry (DDS) view their entry-level degree as the terminal professional degree and further note that it is the purview of each academic institution to determine which credentials they choose to recognize.31 Threlkeld et al31 reported that in recent surveys of medical, dental, and pharmacy schools. 74.6% of all full-time faculty members in medical schools, 40.8% in pharmacy schools, and 84.3% in schools of dentistry hold the professional doctorate as their sole degree. Thus, precedents have been set for recognition of the entry-level professional degree in academia. The physical therapy profession must decide whether an entry-level clinical doctorate should be the academic peer of a post-professional academic doctorate within die physical dierapy academic community.

Advanced Study

Concerns have also been raised regarding the state of advanced study within the Geld of physical therapy.27 The potential long-term affects of the entry-level DPT on advanced study has been discussed.37 For several decades, the profession has strongly endorsed advanced study in the form of specialization and certification" as well as advanced master's degree training in physical therapy and related fields. Certification of clinical specialization recognizes knowledge, skill, and experience exceeding the entry level in a specialty area. Concern has been raised that advanced study will be inadvertently discouraged by conferral of a doctorate at the entry level.37 Additionally, some practitioners are concerned that those holding clinical specialization and advanced degrees, but without a DPI. will not he able to clearly present their advanced credentials to the public.

Black2 and Rolhstein25' have suggested that it is imperative that those currently in practice without a DFT be afforded the opportunity to upgrade their skills and achieve a DPT through "transitional" programs. Because the DPT is a preparation for entry into general practice, it is unclear to many how "transitional" programs can upgrade the knowledge and skills of the specialized or seasoned clinician, who has many years of experience, participated in numerous continuing education programs, and perhaps holds a specialty certification or an advanced degree. In optometry, this issue was addressed simply by having practitioners adopt the title of "doctor" when the profession itself made the transition to the doctoral level.52 In physical therapy, assessment of professional portfolios and clinical competence has been suggested as a mechanism for considering advanced education, experience, and clinical competence in designing programs that can enhance the skills of practicing clinicians and provide essential knowledge and skills not previously obtained.52,53 However, this has not yet been proven to be a viable option in some academic institutions. Of further concern is the fact that transitional DPT programs operate outside the standards and quality control measures inherent in the CAPTE accreditation process.52 These advanced programs maintain general or regional accreditation, but no professional accreditation.46 Because of inconsistent oversight procedures, some question the legitimacy of transitional or advanced DPT programs.37 Table 3 provides a summary of the questions raised in the literature surrounding the DPT.

CONCLUSION: WHERE DO WE GO FROM HERE?

Held up to the prism of history, does the entry-level OPT make sense as the next progressive step in the evolution of physical therapy education from its technical roots to its current academic status? While wars and epidemics drove early innovation and educational advances, more recent armed conflicts have been circumscribed and produced far fewer wounded, and the response to the recent AIDS epidemic by physical therapists has relied largely on previously developed examination and intervention skills. Although medical and technological advances continue, they have not created new practice areas. Recent innovations such as left ventricular assistive devices, stereotactic radio brain surgery, and hand transplantations do not affect as large a population as joint replacements and openheart surgery did when introduced. Furthermore, intervention after newly developed surgical procedures is generally subsumed within existing practice patterns. The rise in industrial rehabilitation and the aging of the American population have the potential to bring physical therapy services to new practice settings, hut physical therapists already practice in settings from home to hospital and school to the workplace, helping people across the life span. Thus, on one hand, the forces that propelled the field to past educational advances do not appear as compelling today.

On the other hand, current physical therapy practice faces unique new challenges, for the first time, the demand for services is declining and there is an overabundance of physical therapists. Physical therapy education is also challenged to produce practitioners with both the skills and vision to examine people with multiple system problems in a direct-access environment and to arm them with an evidence base that validates physical therapy examinations and interventions. Both are vital to the future of the field.

Perhaps the challenge of elevating the knowledge and skill of new physical therapists to the level required to responsibly provide primary care and of providing the research base for physical therapy procedures required by the medical community, insurance industry, and the increasingly sophisticated public is sufficient to rationalize raising the entry requirements to the doctoral level. Certainly, quality improvement, in the form of continuous matching of educational products and services to the needs of society within a changing health care system, is paramount.32 It is imperative that the profession take the time to gather sufficient outcome data to help form a clear plan to address this challenge through adoption of rigorous educational standards. Validation of societal and professional needs would he a critical first step in making informed decisions and achieving consensus on the future direction of the profession and its educational underpinnings. As Rothstein32-47 suggested, further dialogue to attain consensus must transpire. A "quick-fix path" will not enhance credibility in the eyes of the public, whose trust is vital, and may only serve "a fatal blow to [the] profession."48(p781) His our view that unless the developers of educational standards for the new DPT address the responsibility of primary care and evidenced-based practice with substantive improvements in clinical and research training, the respect and autonomy sought by the field may prove elusive.

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Received December 6, 2000, and accepted December 12, 2001.

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