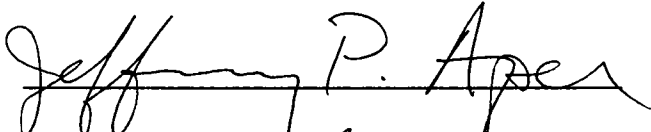
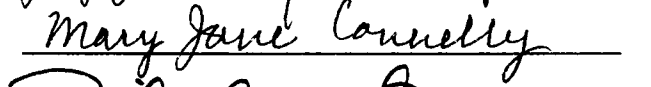


To the Graduate Council:

I am submitting herewith a dissertation written by Deborah A. Ingram entitled "A Study of the Essential Functions Required of Physical Therapy Students." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Leadership Studies in Education.

  
E. Grady Bogue, Major Professor

We have read this dissertation  
and recommend its acceptance:


Accepted for the Council:

  
Associate Vice Chancellor and  
Dean of the Graduate School

A STUDY OF THE  
ESSENTIAL FUNCTIONS REQUIRED OF  
PHYSICAL THERAPY STUDENTS

A Dissertation  
Presented for the  
Doctor of Education  
Degree  
The University of Tennessee

Deborah A. Ingram

December, 1994

DEDICATION

This dissertation is dedicated to Alex.

May she have the opportunity to  
pursue her dreams and aspirations.

## ACKNOWLEDGMENTS

I would like to thank my major professor Dr. Grady Bogue for his guidance and encouragement. In addition, I would like to thank Dr. Richard Metzger, for his countless hours of assistance with the pilot study and committee work. I am appreciative of the other committee members, Dr. Mary Jayne Connelly and Dr. Jeff Aper for their assistance and suggestions. I would also like to thank Dr. Alice Thomas for her enthusiasm and support during the early planning stages and Marcy Wilson and Alfred Montalvo for their assistance with the data entry process. I am indebted to my colleagues in the physical therapy program at the University of Tennessee at Chattanooga for their constant support during these four years. In particular, I appreciate Dr. Randy Walker, the Dean of the College of Health and Human Services, for serving as the consultant for the study.

I have been blessed with a wonderful family who believes in the value of education. I am especially grateful to my husband David for his patience and support; my parents, Ralph and Margaret Bryson for their encouragement; and the memories of Granny Bryson who taught our family that people with disabilities can overcome tough obstacles through persistence and stamina.

A special thank you goes to the Tennessee Physical Therapy Association for their generosity in funding this study.

## ABSTRACT

The Americans with Disabilities Act (ADA) was established to assure qualified individuals with disabilities access to employment and programs provided through the public sector. In order to determine if an individual is a qualified applicant for programs or services, the ADA states that applicants must be able to complete the essential eligibility requirements of the program with or without reasonable accommodation. The review of literature did not reveal any studies concerning the essential functions that should be required of physical therapy students. A pilot study conducted in 1993 revealed that eight physical therapy educational programs had lists of essential functions.

The purpose of this study was to determine the opinions of physical therapy educational program directors concerning the essential functions physical therapy students, as potential practitioners, must be capable of completing with or without reasonable accommodation. The selected methodology was a three round Delphi technique. Nine essential functions were identified from existing lists of essential functions. Participants had the opportunity to modify or make additions to the initial list in the first round and rate the items in the last two rounds using an ordinal scale. Fifty-eight program directors participated in Rounds 1 and 2. In the final round, 52 program directors completed the process.

All participants rated communication skills and practicing in a safe, ethical and legal manner as definitely essential functions. Near consensus (95-99%) agreement was noted additionally in determining physical therapy needs of patients with movement dysfunction and demonstrating ability to apply universal precautions. The performance of treatment procedures and assessment procedures were rated definitely essential by 90-95% of the participants.

The least agreement was noted with the essential function of participation in the process of scientific inquiry. Half of the participants rated this item definitely essential. In comparing the responses of bachelor's and master's programs, the median response for master's programs was definitely essential. Whereas, the median response for bachelor's programs was somewhat essential. Programs with 40 or fewer students rated this item higher than larger programs.

The results of this study should serve as a reference for physical therapy educational programs to develop lists of essential functions required for their students. The lists should be shared with all potential applicants to assist with qualification decisions.

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## CHAPTER 1

### INTRODUCTION

#### General Introduction

People with disabilities have long experienced discriminatory acts. The impact of this discrimination can be seen in the employment patterns of this group. The 1989 U.S. Bureau of the Census report revealed that persons with disabilities had not attained the same work status as persons without disabilities. In 1988, the unemployment rates of males and females with disabilities were both 14.2%. In comparison, the unemployment rates of persons without disabilities were 6.2% for men and 5.2% for women. The mean earnings of persons with disabilities were also significantly less. In 1987, the average annual salary for men with disabilities was \$15,497 in comparison to \$24,095 (64%) for men without disabilities. The average annual salary for all employed women with disabilities was \$8,075 in comparison to \$13,000 (62%) for employed women without disabilities. Of all employed persons with college degrees, only 3.8% had disabilities. Fifty per cent of the employed males and 46% of the employed females with disabilities had college degrees.

The Americans with Disabilities Act of 1990 (ADA) (Public Law 101-336, 42 U.S.C. § 12101) was established to empower qualified persons with disabilities to seek employment

opportunities, transportation, and access to programs and services without fear of discrimination. Title I of the ADA prohibits employment discrimination against qualified individuals with disabilities. Title II of the ADA prohibits discrimination of qualified persons with disabilities for programs and services provided by public entities. Title III of the ADA requires privately owned entities to be accessible to persons with disabilities. Title IV assures telecommunications relay systems are available to persons with hearing and speech impairments.

Higher educational settings are impacted by the law in various ways. To assist universities with implementing the ADA, Rothstein (1991) provided legal advice concerning the development of policies related to students and staff with disabilities. One recommended policy was that departments develop and implement "technical standards required for admission or participation" in services (p.479). Rothstein also recommended the implementation of professional education programs for faculty and staff on disability concerns and the assurance of campus accessibility for all persons.

During the program admissions process, faculty determine the qualification status of each applicant. The ADA defines the "qualified individual with a disability" as one who can "meet the essential eligibility requirements for the... participation in programs or activities provided by a public entity" (ADA, 1990, Title II, Section 201(2)). To proceed

with this process, Bowman and Marzouk (1992) and Mirone (1993 a,b) suggested that educational programs develop lists of essential skills required for students to be able to demonstrate, similar to lists of essential functions in employment settings. Mirone (1993b) recommended that the lists should be available to all applicants, allowing each applicant to make the initial determination of his or her qualification. The United States Supreme Court decision in *Southeastern Community College v. Frances B. Davis*, 442 US 397 (1979) indicated that educational programs could develop eligibility requirements and utilize technical standards all students must be capable of completing during the program.

#### Statement of the Problem

The ADA assures the qualified applicant with a disability equal opportunity to pursue program admission at public institutions (ADA, 1990). Therefore, physical therapy program admission procedures at public institutions should not discriminate against qualified persons with disabilities. Without lists of essential functions, programs could potentially exclude qualified applicants with disabilities based solely on perception rather than actual abilities. Physical therapy is a profession that promotes the abilities of persons with disabilities, and is directly linked to their rehabilitation element. Thus, the profession has a special obligation to lead on this issue.

One of the primary responsibilities of physical therapy (PT) educational programs is to graduate qualified persons who can perform the necessary tasks safely and competently (Commission on Accreditation in Physical Therapy Education, 1991). A pilot study was conducted to determine the number of physical therapy programs with lists of essential functions students must be able to complete to graduate, with or without reasonable accommodation (Ingram, 1994). The population of the study was composed of the 126 entry-level physical therapy programs accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE). One hundred physical therapy program directors (79%) completed the survey. Only 8 (8%) of the accredited entry-level physical therapy programs that responded had lists of essential functions students must be capable of completing in their programs. A list of the preferred essential functions had not been developed by the profession.

#### Statement of the Purpose

The purpose of this study was to identify the essential functions that should be required for graduation of entry-level physical therapy students from the perspective of the educational program directors. The results will serve as a resource for physical therapy programs to utilize in developing programmatic admissions policies.

### Research Questions

This study attempted to answer the following primary question:

- 1) What do physical therapy educational program directors think are the essential functions a physical therapy student, as a potential physical therapy practitioner, must be capable of completing with or without reasonable accommodation?

The nature of the study allowed the consideration of other issues:

- 1) Is there a difference of opinion, as seen by program directors, between the desired essential functions required of entry-level master's versus bachelor's degree programs?
- 2) Is there a difference of opinion, as seen by program directors, between the desired essential functions required by public versus private institutions?
- 3) Is the size of the program a factor in defining the list of essential functions?

### Importance of the Study

The study contributed to the profession of physical therapy by encouraging physical therapy faculty to identify those essential functions that should be required for all students admitted to their programs. Recognizing that the

vast majority of physical therapy programs had not developed lists of essential functions students must be capable of completing, the intention of this study was to provide a reference for the programs to utilize in developing their own lists of required essential functions. It is not intended to be utilized as the sole list of essential functions required for all programs. Marilyn Moffatt, president of the American Physical Therapy Association, commented in a letter to the author, that the study could have "major implications" for physical therapy educational programs (1993).

In addition to the professional contribution, the study makes a public contribution. Physical therapy educational programs admit qualified applicants who do not pose a direct threat to personal or public safety. In making the initial program acceptance decisions, the lists of essential functions may assist educational leaders in determining whether or not the applicant meets the eligibility requirements and could perform the essential functions safely.

#### Assumptions

It was assumed that the directors who were surveyed were familiar with the ADA and the information needed to complete the survey. It was also assumed that the essential functions identified in the study are critical to professional competence.

### Limitations and Delimitations

Limitations of the study included:

- a. The results of this study may only be applied to physical therapy educational programs.
- b. Not all program directors participated.

Delimitations of the study included:

- a. This study included only accredited entry-level physical therapy programs in the United States.
- b. This study did not include physical therapist assistant programs and advanced master's programs in physical therapy.
- c. This study included responses from only the education program directors.

### Definition of Terms

The following terms were defined for the purpose of this study:

- 1) Accredited Entry-Level Physical Therapy Program. An educational program accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), providing an entry-level physical therapy degree. The degree awarded is either a bachelor's or master's degree.
- 2) American Physical Therapy Association (APTA). The national organization comprised of 56,198 members (APTA, 1993).

- 3) Americans with Disabilities Act of 1990 (ADA).  
Public Law 101-336: a federal mandate to eliminate discrimination against persons with disabilities.
- 4) Direct Threat. "A significant risk to the health or safety of others that cannot be eliminated by a modification of policies, practices, or procedures, or by the provision of auxiliary aids or services."  
(U.S. Equal Employment Opportunity Commission (EEOC) and U.S. Department of Justice (DOJ), 1990, p.II-27).
- 5) Director. The administrator directly responsible for the educational program in physical therapy.
- 6) Disability. "With respect to an individual- (A) a physical or mental impairment that substantially limits one or more of the major life activities of such individual; (B) a record of such impairment; or (C) being regarded as having such an impairment." [ADA, §3 (2)]
- 7) Essential functions. The critical skills or technical standards required for safe and competent practice.
- 8) Physical or mental impairments. Included in this category are any "physiological disorder or condition, cosmetic disfigurement, or anatomical loss affecting one or more of the following body systems: neurological; musculoskeletal; special

sense organs (which would include speech organs that are not respiratory such as vocal cords, soft palate, tongue, etc.); respiratory, including speech organs; cardiovascular; reproductive; digestive; genitourinary; hemic and lymphatic; skin; and endocrine. It also means any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional or mental illness, and specific learning disabilities" (U.S. E.E.O.C. and DOJ, 1990, pp. II-17-18).

- 9) Physical Therapy. "The health profession which is concerned with health promotion, prevention of physical disabilities, and with rehabilitation of persons disabled by pain, disease, or injury; and which is involved with evaluating patients, and with treating through the use of physical therapeutic measures as opposed to medicines, surgery, or radiation" (APTA, 1986).
- 10) Physical Therapy Student. A college student enrolled in an entry-level physical therapy program.
- 11) Qualified Individual with a Disability. "An individual with a disability who, with or without reasonable modifications to rules, policies, or practices, the removal of architectural, communication, or transportation barriers, or the

provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by a public entity." [ADA, §201 (2)]

## CHAPTER 2

### REVIEW OF LITERATURE

#### Introduction

The literature review is divided into four sections. The first includes an overview of disabilities and related issues as they have been addressed by medical and allied health educational programs. The next three sections review issues regarding the education of medical, nursing, and physical therapy students with disabilities.

The literature search included the following: a manual bibliographic search of articles listed in the 1988-April 1993 cumulated Index Medicus using the terms or phrases *disabled, rehabilitation, medical education, nursing education, physical therapy, handicapped, physical disability, and disability evaluation*; and a computerized bibliographic search of entries in the Educational Resources Information Center (ERIC) using the descriptors *education, disabilities, handicapped students, allied health occupations, physical therapy, medical education, Americans with Disabilities Act (ADA), higher education, admissions, programs, disabled students, and nursing education*.

### Disabilities

According to the ADA, forty-three million persons in the United States have disabilities (1990). As persons with disabilities pursue employment and access to programs and services provided by the public and private sectors, they encounter many attitudinal and architectural barriers. The ADA was established "to provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities" (ADA, 1990, Sec. 2(b)(1)).

The medical and allied health professions interact with persons with disabilities, providing necessary medical intervention and rehabilitation. Occasionally, persons with disabilities may choose to pursue careers in these professions. French (1988) surveyed 24 medical and allied health professionals or students with disabilities concerning the perceived advantages and disadvantages of working in a health related field as a person with a disability. The most often cited advantages were related to psychosocial issues and an enhanced ability to empathize with patients with disabilities. A perceived disadvantage was that occasionally a patient may feel uncomfortable with a health care worker who has a disability because the disability of the patient may appear minor in comparison to that of the worker with a disability. French commented that this disadvantage may also serve as a positive motivating influence for the patient who sees the worker as an independent contributor to society.

French (1988) also revealed that the majority of the persons surveyed did not experience discriminatory practices related to admissions to allied health and medical educational programs. However, the survey was limited to 24 persons and one third of the participants reported difficulty either with admissions to the programs or at some time during the educational process. One half of the participants reported their professors displayed negative attitudes.

Prior to 1990, legal decisions related to persons with disabilities were influenced by the Rehabilitation Act of 1973. The United States Supreme Court reviewed a case in 1979 concerning a student's denial for admission to a nursing program. The decision in *Southeastern Community College v Frances B. Davis*, 442 US 397 (1979) granted college programs the authority to establish technical standards all students must be capable of completing in the course of the program. Southeastern Community College denied admission to Davis, an individual with bilateral sensori-neural hearing loss. The nursing faculty of the college determined that Davis would be unable to complete the clinical portion of the curriculum secondary to an inability to "participate safely" without being able to hear. It was hypothesized that the applicant could not utilize her mode of communication, lip reading, in the surgical environment where masks covering the mouth were required. The United States Supreme Court upheld the denial of the applicant to the program because the applicant did not

meet the program's requirements.

In another case, *Wynne v. Tufts University School of Medicine*, 932 F.2d 19 (1st Cir. 1991), a medical student with the diagnosis of dyslexia challenged the school on his failure in classes utilizing multiple choice exams. The initial decision by the District Court ruled in favor of the school. This decision was overturned by the First Circuit Court of Appeals. The ruling emphasized that programs must provide accommodations to students with disabilities. The accommodation may include alternative methods of testing.

One of the objectives of the medically related educational programs is to prepare students to practice autonomously upon graduation. To meet this objective, graduates must first meet state licensure requirements. In a notice from the National Council of State Boards of Nursing (1992), issues related to licensure and the ADA were specifically addressed:

The essential eligibility requirements for licensure are broad and tied to safety and competence. The essential requirements for employment are more focused and tied to the employer's business needs. Boards are encouraged to avoid the tendency to confuse the application of this language. Licensure situations are not the same as employment situations. Employment is more detail specific and can be evidenced by job descriptions and similar positions within the organizations. Employers often have more flexibility in making accommodations. Licensure requirements are tied to statutes and regulations-the minimal, essential requirements for safe, competent practice.

In many situations, Boards of Nursing have strived to achieve the balance between the right of an individual to practice his or her chosen profession and the right of the public to safe, competent care. The ADA requires that Boards of Nursing consider the essential licensure requirements for nursing practice, and, for disabled candidates, whether appropriate modification would allow the individual to meet the essential requirements. The ADA does not prevent Boards from denying licensure to unqualified individuals. This is justifiable because of the important role and purpose of licensure to protect the public (National Council of State Boards of Nursing, 1992, p. 9).

Therefore, initial eligibility decisions regarding admissions to medically related professional programs are critical to the licensure process.

#### Medical School Students with Disabilities

Ring (1988) conducted a survey of all accredited medical schools in the United States concerning their policies and practices related to students with disabilities. The survey, conducted during the 1987-88 academic year, revealed that .25% of medical students had disabilities and 57% of the medical schools had admissions policies regarding students with disabilities.

The majority of the literature on medical students with disabilities is dated. Prior to the ADA, Moore-West and Heath (1982) reported that 20 American medical schools, between 1976 and 1980, had not accepted students with disabilities. Nine of the 20 schools indicated that students with disabilities

had not applied. Thirty-seven medical schools had accepted one or more students with disabilities. Of the 72 medical students with disabilities identified in the study, the types of disabilities varied: visual loss, amputations, deafness, Hodgkins Disease, hand deformities, and disabilities requiring the use of wheelchairs and canes. Forty of the students were rated by the faculty as doing "well" or "very well" in their academic performance. It is not clear what the author meant in the rating of academic performance.

A survey of the 1982-1984 membership of the American Society of Handicapped Physicians identified 155 physicians and 20 medical students with physical disabilities (Wainapel, 1987). One third of the participants in the study sustained or acquired the disability prior to or during medical school. Forty percent of the medical students with disabilities had the diagnosis of spinal cord injuries.

In a survey of admission criteria of 115 medical schools, Silver, Nadelson, Joseph, Covi, Jones, and Ruff (1979) reported one third of the schools "generally" denied admissions to applicants with mental disorders. A major concern related to students with mental disorders is the concern for public and personal safety. The ADA Title II Technical Assistance Manual (1990) specifically addresses this admission issue: "An individual who poses a direct threat to the health or safety of others will not be 'qualified'" (p. 7). Strasser (1991) emphasized however that mental illness is

difficult to diagnose and opinions on the severity and implications of the disorder often conflict.

Medical students with cognitive disorders have also faced discriminatory practices with admissions. Faigel (1992) reported that even after the passage of the ADA, ten medical schools continued to deny access to applicants with learning disabilities while the majority of the medical schools provided alternate learning experiences for students with learning disabilities.

Prior to the passage of the ADA, Hartman and Hartman (1981) addressed three primary concerns of medical schools related to the admissions of students with disabilities:

First, how can a medical school, whose goal is to graduate students who could enter any medical specialty, admit a disabled student who might be able to pursue only a limited number of specialties within the medical profession? (p.90)

The authors suggested that medical education programs currently allow students options for elective courses, comprising 12-18 months of the curriculum. Therefore, students without disabilities would already be pursuing specialty choices during the educational process.

Second, are the costs of educating handicapped persons prohibitive?  
(Hartman and Hartman, 1981, p.90)

Funding alternatives often exist for the purchase of equipment and assistive devices that would greatly enhance the education of a person with a disability. Often, these devices or the

means of providing the educational experience are inexpensive. Additional faculty time may also be required to present the information in a non-traditional manner. One of the authors, David Hartman, M.D., revealed his personal experience as a blind medical student. He stated that in a class taught by multiple professors, the average additional time for this instruction was 2 to 3 hours per semester for each professor.

Moore-West and Heath (1982) reported that 19 medical schools indicated no "administrative problems" with providing education to students with disabilities. Six schools required modifications secondary to architectural barriers. Nine schools replied that students required additional academic support and 11 schools reported that students with disabilities required more "emotional support".

Third, will the admission of disabled students result in the lowering of medical school standards? (Hartman and Hartman, 1981, p.90).

With assistance, students with disabilities can often design alternative techniques for performing essential skills. Hartman and Hartman listed examples of alternative techniques: an optacon may be used for reading electrocardiograms and a braille sphygmomanometer may be used for monitoring blood pressure. Utilizing this approach, the authors implied that programs would not lower the academic standards.

Martini (1987) of the American Medical Association (AMA) reported that the AMA does not condone medical schools denying admissions to students with disabilities without

justification. To prevent discrimination, the accreditation process for medical schools encourages each medical school to establish "technical standards" students must be able to complete for the program. In 1988, Ring reported to the AMA that twenty-two per cent of the accredited medical schools had lists of technical standards that must be met to graduate. Following the passage of the ADA, Madorsky (1992) suggested medical schools consider eliminating admissions standards that are exclusionary to students with "visual, speech, hearing, mobility, and manual impairments" (p. 2031).

In summary, it has been reported that few students with disabilities have been admitted to medical schools. Many of those who were admitted were successful in their educational endeavors with reasonable accommodations.

#### Nursing Students with Disabilities

Davidson (1994) surveyed all program directors of baccalaureate degree nursing programs in public institutions, accredited by the National League for Nursing. Program directors were asked about admissions policies concerning students with disabilities. The results revealed that 83% of the programs did not have lists of essential functions students must be capable of completing during the educational process. In addition, 86% of the programs did not ask applicants if they could complete the essential functions of the program with or without reasonable accommodation during

the admissions process.

In 1989, the University of Oklahoma College of Nursing task force determined that the one critical technical skill that all students must be capable of performing was cardiopulmonary resuscitation (CPR). The task force then developed a list of the physical requirements necessary to meet this skill and published these requirements. The list included guidelines on visual, hearing, physical, speaking, and dexterity abilities. Students unable to meet the physical requirements were allowed to petition the department and request accommodations (Weatherby and Moran, 1989).

Chickadonz, Beach and Fox (1983) reported a specific example of the admission of a nursing student with a profound hearing loss, requiring the use of hearing aids to detect sound. The student was admitted to the School of Nursing at the Medical College of Ohio/Bowling Green State University/University of Toledo program. The faculty arrived at the following conclusions. First, labeling students is inappropriate and should not be condoned (i.e., the deaf student). Secondly, "it was useful to meet with" the student "prior to the beginning of the course to identify the objectives, expectations, and potential barriers that needed to be addressed" (p. 332). The student with a disability or another individual with the disability could serve as excellent resources to determine the reasonable modifications/accommodations to meet the objectives. The

program defined the "abilities and skills for admission to the undergraduate nursing major" (p. 333). The list included the following categories of skills and abilities: "observation; communication; motor ability; conceptualization; integrative and quantitative; and behavioral/social acceptability" (p.333). The authors concluded that programs, even with published technical standards, still require a "human factor" to assess the ability of the applicant to be able to demonstrate the skills. The process then requires a judgement concerning acceptance or denial of admission.

Anderson (1981) reported, from a nursing faculty perspective, public safety concerns when working with students with disabilities:

Unfortunately, legislation lumps every handicapped person into one category. Not all handicapped students are able to function successfully as a registered nurse. Each person must be evaluated individually to determine if he or she is capable of meeting the behavioral objectives of each nursing program. The same principle applies to students who are not handicapped. (p.26)

Job opportunities may be limited for nurses with certain types of disabilities. Winland-Brown and Pohl (1990) conducted a survey of nursing administrators and personnel directors in Florida hospitals and skilled nursing facilities concerning their perceptions related to hiring nurses with disabilities. The majority of personnel directors (81%) stated they would not hire a nurse requiring use of a wheelchair for clinical practice. In contrast, half of the

nursing administrators would hire a nurse who required the use of a wheelchair. In addition, the majority of the nursing administrators (66%) stated they would hire a nurse with a history of back pain.

#### Physical Therapy Students with Disabilities

The American Physical Therapy Association has not collected any information on physical therapy students with disabilities. In addition, no studies of physical therapy students with disabilities were found in the professional literature.

Woods (1993a) interviewed four physical therapists with disabilities. One of the four therapists sustained the disability after graduation; one sustained the injury after one year had been completed in the educational program; and two had disabilities prior to application to physical therapy programs. One of these, who is legally blind, was denied admission to physical therapist programs, but was admitted and later graduated from a physical therapist assistant program. The student then appealed the denial to a physical therapist program and was admitted. Upon graduation, the therapist initially encountered difficulty gaining employment. Potential employers expressed safety concerns although none addressed concerns with the ability to read the medical record. To the therapist, this was the most difficult task.

Each of the therapists reported positive experiences as

clinicians. One therapist reported patients appeared more willing to wear their assistive devices, because the patients could see the therapist wearing assistive devices. Another therapist with a disability reported patients appeared more motivated in therapy when working with a therapist with a disability.

The four therapists commented on the lack of information on therapists with disabilities. First, because of the shortage of therapists with disabilities, there is limited experience by clinicians and educational programs with working with therapists and physical therapy students with disabilities. Secondly, the issue of public and personal safety prevents persons with disabilities from gaining access to programs and employment. One of the therapists interviewed by Woods, commented that "no ethical and responsible physical therapist puts a patient at risk. Why would a PT with a disability be any different? We know what our limitations are, and we work around them" (p. 47).

Woods (1993b) also interviewed a physical therapy student with a visual loss disability and listed some technological advancements to assist in the educational process: a braille goniometer, an audible meter reader, and a closed-circuit TV camera that enlarges type. In addition, textbooks on tapes and tactile models are useful. The student reminded the readers that there are a variety of methods that may be utilized to reach the same educational results.

During the admissions phase, programs are not required to set quotas or select students with disabilities over other qualified applicants. Mirone (1993b) stressed that the ADA is not an affirmative action statute. In addition, Mirone commented that the law does not require physical therapy programs to accept students that do not meet the qualifications for program admissions.

To avoid discriminating against students with disabilities, Mirone (1993a) suggested that academic institutions establish graduation requirements required for all students. He recommended that physical therapy programs establish lists of essential skills students must be capable of completing prior to graduation. Mirone also recommended that programs share these lists with applicants during the admissions process. This policy serves two purposes: "1) to protect the public and 2) to make admissions decisions, without discriminating against persons with disabilities, on the basis of the student's ability to meet fair and reasonable academic requirements" (p. 40).

In an address to the 1993 American Physical Therapy Association annual meeting, Scott Ward, representing the ADA Task Force of the APTA, addressed issues from the academic program perspective related to the admissions process for applicants with disabilities. He stated that programs are not allowed to ask applicants questions about the disability, but are allowed to ask questions related to the person's ability

to perform the essential functions of the program. If a program requires applicants to perform these tasks during the admissions phase, all applicants must be required to participate. Students with suspected disabilities may not be singled out. Ward also emphasized that it is the responsibility of the student to notify the institution if they desire reasonable accommodation to perform the essential functions.

In a report on the 1993 Combined Sections Meeting of the American Physical Therapy Association, Winter (1993) reviewed the report from the ADA Task Force of the APTA. To assist programs with reviewing the curriculum and developing lists of essential functions, the task force members suggested that programs elicit assistance from a person without a disability. The rationale for this suggestion was related to the difficulty of assessing the curriculum with a particular disability in mind. The task force reminded the audience to address the essential functions required to complete the curriculum and not focus on whether a person with a specific type of disability could complete the tasks.

Ingram (1994) reported that the majority (92%) of accredited physical therapist programs did not have lists of essential functions students must be capable of completing with or without reasonable accommodation. In addition, the issue of ability to complete the essential functions was not addressed during the application and admissions process by

most programs (89%). Three physical therapy programs submitted their lists of essential functions. One list included skills related to cognitive, mobility, sensory and affective abilities. Another list defined standards in observation, communication, sensorimotor, intellectual, judgement, and behavioral/social attributes. The third list included a variety of content areas to be mastered during each semester of the curriculum.

### Summary

The ADA ensures "qualified individuals with disabilities" the opportunity to pursue programs and services provided through the public sector (1990). The Supreme Court has previously ruled that programs have the authority to establish the "essential eligibility requirements" for admissions to programs (*Southeastern Community College v. Davis*, 1979). The majority of physical therapy programs do not have lists of essential functions required of the students (Ingram, 1994). Reasonable accommodations have been made for persons with disabilities participating in medical school, nursing and physical therapy programs (Woods 1993a, 1993b; Hartman & Hartman, 1981; Chickadonz, Beach & Fox, 1983). A legal decision has been rendered that programs must offer reasonable accommodations to students (*Wynne v. Tufts University School of Medicine*, 1991). Numerous examples of medical, nursing and physical therapy students with disabilities gaining employment

upon graduation have also been cited in the literature (Woods, 1993a; Wainapel, 1987; French, 1988).

The review of literature failed to reveal any studies defining the essential functions a physical therapy student, as a potential physical therapy practitioner, must be able to complete with or without reasonable accommodation.

### CHAPTER 3

#### RESEARCH METHODS

##### Research Design

The research design for this study was exploratory and descriptive. The Delphi technique was selected as the method to determine the opinions of the physical therapy program directors concerning the items to be included on lists of essential functions. Developed in the 1950s by the Rand Corporation, the Delphi technique utilizes a series of questionnaires to identify the opinions of a designated group of experts on a particular issue (Cunningham, 1982; Moore, 1987; Delbecq, Van de Ven, & Gustafson, 1986). The process begins with an initial questionnaire requesting the opinions of a group of experts on a broad question. The researcher summarizes all responses and develops a subsequent questionnaire. The second questionnaire allows the experts to review the comments from the other participants and "to establish preliminary priorities among the items" (Delbecq, Van de Ven, & Gustafson, 1986). The third questionnaire permits an opportunity for closure on the topic.

It is a research method that can be utilized with individuals "separated by distance" through the use of mail questionnaires (Moore, 1987). It is more cost effective than

requiring the group of experts to meet. The program directors for this study represented institutions across the United States. Another advantage of the Delphi technique is that it removes personality bias.

Delbecq, Van de Ven, and Gustafson (1986) listed three criteria for utilizing the Delphi technique: "1) adequate time; 2) participant skill in written communication; and 3) high participant motivation" (p.84). To meet these criteria, the study was designed to occur during a five month period. The participants were all college educators. The pilot survey indicated the participants were interested in the topic. Seventy-nine per cent of the program directors responded to the pilot survey.

#### Population Definition

The study population included all directors of entry-level physical therapy education programs in the United States accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE). A list of 129 programs was supplied by the American Physical Therapy Association (APTA) (see Appendix A). The population included 64 programs that awarded entry-level master's degrees and 65 programs that awarded bachelor's degrees in physical therapy. The population contained 82 public and 47 private institutions. The District of Columbia and 45 states were represented.

The study was introduced briefly to a sample of the population at the Annual Meeting of the American Physical

Therapy Association in June, 1993, through a seminar for educators sponsored by the APTA's ADA Task Force. In addition, the chairman of the Academic Administrators Special Interest Group, of the APTA, invited the author to present an overview of the study and to solicit participation by the membership at the Combined Sections Meeting in New Orleans, Louisiana in February, 1994.

#### Data Collection Procedures

The Delphi technique selected for this study consisted of three rounds of questionnaires. The data collection instruments were developed by the author based upon the results of each round of the survey. Approval of the study was obtained from the University of Tennessee Committee for Research Involving Human Subjects.

An introductory letter was mailed to each program director on January 4, 1994, requesting participation in the upcoming study. In addition, all program directors were asked to send any new or revised lists of essential functions required of physical therapy students (see Appendix B). Nine programs submitted lists.

The first round of the study was mailed to the 129 program directors on April 19, 1994. It included the first questionnaire and a cover letter describing the study and requesting full participation through the series of questionnaires (Appendix C). Directions for completing the

first questionnaire and a return deadline of four weeks were stated on both the cover letter and the questionnaire.

Subjects were presented with a starting list of essential functions, derived from the lists of essential functions identified in a pilot survey (Ingram, 1993) and the introductory study request letter. In an effort to assure content validity, a former director of an accredited physical therapy program participated as a consultant in the review of the submitted lists of essential functions. He assisted with the identification of the items to be included on the first questionnaire. Participants were then requested to make modifications to the list by rewording any essential functions and adding additional functions not included on the list.

The results of the comments from the first round were summarized and categorized. The consultant reviewed all comments and assisted with modifications and additions to the list. A second questionnaire was developed incorporating the results of the first round (Appendix D). In the second round, participants were presented a revised list of essential functions and asked to rate each of the items using an ordinal scale. Participants were given the opportunity to provide any additional comments at the end of the questionnaire. A cover letter introduced the second round and provided directions. A return deadline of four weeks was stated. A follow-up reminder letter was sent to those participants that did not meet the deadline date (Appendix E).

The results of the second round of questionnaires were analyzed. The third questionnaire incorporated the results from the second round questionnaire and provided participants with their individual previous response and the group median response for each item (Appendix F). The participants were asked to make a final rating of each item. They were given the opportunity change their rating of each item. If the final rating was different from the group median, the participant was requested to state the reason. A cover letter providing directions accompanied the third round. A return deadline of four weeks was stated. A follow-up reminder letter was sent to participants not responding by the deadline (Appendix G).

The surveys were distributed by mail during the months of April-August, 1994. Postage-paid return envelopes were provided for the participants during each round of questionnaires. All surveys were numerically coded in the top right corner of the first page for tracking purposes. This was required to assure that individuals participating in each round, received the subsequent survey. The author maintained the only copy of the program identification key.

Respondents were assured of their confidentiality. All responses were stored in a locked filing cabinet. The author did not refer to the program identification key when reviewing the responses of any of the participants. Reference was never made to the response of any particular program director.

At the completion of the study, participants were sent a thank you letter and a copy of the results (Appendix H).

#### Description of Measures/Instruments

The first questionnaire included demographic questions and a list of essential functions (Appendix C). The demographic section requested respondents to indicate the type of degree awarded by the program (bachelors or entry-level masters), funding source (public or private), and size of class. This information was necessary to answer the study questions related to differences of opinions. To proceed with answering the primary study question, the second part of the questionnaire included nine essential functions. Two of the essential functions had lists of specific procedures. Participants were directed to make modifications to any of the items listed. A comments section was included under each essential function. A section at the end of the questionnaire provided space for the participants to list additional essential functions not included on the survey and the rationale for adding the items to the list.

The second questionnaire was developed after analyzing the results of the first questionnaire (Appendix D). Four additional items recommended in the first round were added to the list of essential functions. In addition, based upon suggestions from the participants, the wording was modified in four of the essential functions. In round two, participants

were requested to rate each item using an ordinal scale. Four categories were selected for the scale in order to force the participants to choose on either side of the scale. The categories included: definitely essential, probably essential, probably not essential, and definitely not essential.

The third questionnaire listed the essential functions with the median group rating each item received during the second round (Appendix F). Participants were provided their own previous rating for each item and asked to indicate a final rating of each item. Rationale was requested when a participant did not agree with the median group rating. A final comments section was provided at the conclusion of the questionnaire. In response to the reliability of the study, participants were consistent with their responses across the three rounds. Little change of opinion was noted.

#### Data Analysis Procedures

Utilizing Statistical Analysis System (SAS), the researcher analyzed the results from the questionnaires at the completion of each round. Descriptive statistics, frequency distributions, and percentages were generated for the data and displayed through the use of frequency tables. The responses in the comments section for each round were reviewed. Comments for Round 1 were classified into categories with the number and percentage of responses.

In addition, comparisons were conducted between the

responses generated from the various groups. The dependent variable was the essential function and the independent variables were the degree awarded by the program (bachelor's or master's), size of class (0-40 or >40), and funding source (private or public). The Mann-Whitney U Test was selected because it is a non-parametric test used to determine if two independent groups have been drawn from the same population (Siegel, 1956). In this study, it was utilized to determine if there was a difference of opinion between the responses of the program directors of: 1) entry-level master's and bachelor's degree programs; 2) private and public institutions; and 3) small and large programs. The null hypothesis for this test is that there is no difference and that the groups have been drawn from the same population. The level of significance was set at  $\alpha < .05$ . Siegel (1956) recommended a correction for ties when ties are frequent.

### Summary

The Delphi technique was selected as the method to determine the opinions of the program directors concerning the essential functions that should be required of students. To answer the additional study questions concerning differences of opinions based on program characteristics, the Mann-Whitney U test was utilized.

## CHAPTER 4

### RESULTS

#### Existing Lists

In the preliminary stage of the study, nine accredited programs (7%) submitted existing lists of essential functions. The majority of these programs were public institutions (63%) and awarded entry-level master's degrees (78%). The geographical distribution included eight states.

Table 1 lists the common essential functions noted on the existing lists. These items comprised the list utilized in Round 1 of the Delphi survey. Major categories included:

- 1) skills in communication; 2) performance of physical therapy evaluation procedures; 3) determining patient needs; 4) developing a plan of care; 5) performing treatment procedures; 6) applying universal precautions; 7) demonstrating administrative skills; 8) practicing safely, ethically and legally; and 9) participating in scientific inquiry. Examples of specific evaluation and treatment procedures were listed for those essential functions.

Round 1 of the Delphi survey was sent to the population of 129 directors of accredited physical therapy education programs in the United States. The directors had the opportunity to make modifications, clarifications and additions to the preliminary list of essential functions.

Table 1    Essential Functions Derived from the Existing Lists  
(N=9)

- 
- 
- 1    Utilize appropriate verbal, non-verbal, and written communication with personnel, patients, and families.
  
  - 2    Safely, reliably and efficiently perform and record the results of physical therapy procedures used to assess the function of the movement system, including assessment of:
    - cognitive/mental status
    - vital signs
    - skin and vascular integrity
    - wound status
    - goniometry
    - girth
    - sensation
    - strength
    - tone
    - reflexes
    - movement patterns
    - coordination
    - balance
    - developmental stage
    - soft tissue
    - joint motion/play
    - pain
    - cranial nerve integrity
    - posture
    - gait
    - functional abilities
    - orthotic fit/use
    - prosthetic fit/use
    - wheelchair fit/use
    - ambulatory device fit/use
    - breath sounds
    - breathing patterns
  
  - 3    Determine the physical therapy needs of any patient with perceived or potential movement dysfunction.
  
  - 4    Develop a plan of care for a patient with a movement system dysfunction.

Table 1 (continued)

- 5 Perform treatment procedures in a manner that is appropriate to the patient's status and desired goals. These may include:
- techniques of the neurosensory approaches
  - developmental activities
  - balance training
  - coordination training
  - positioning techniques
  - exercise techniques
  - soft tissue mobilization
  - joint mobilization
  - activities of daily living training and functional activities
    - tilt table
    - transfers
    - bed mobility
    - wheelchair prescription and mobility
    - gait training
    - prosthetic/orthotic training
    - recommendations for architectural adjustments
    - manual therapy
    - thermal agents
    - hydrotherapy
    - electrotherapy
    - massage
    - taping and wrapping techniques
    - postural correction
    - traction
    - wound care
    - postural drainage
    - relaxation exercises
    - cardiopulmonary rehabilitation
    - CPR
- 6 Demonstrate ability to apply universal precautions.
- 7 Demonstrate administrative skills including time management and the utilization of supportive personnel.
- 8 Practice in a safe, ethical, and legal manner.
- 9 Participate in the process of scientific inquiry.
- 
-

### Demographic Characteristics of the Delphi Survey Participants

Fifty-eight program directors (45%) responded to Round 1 of the Delphi study. The participants appeared to be a representative sample of the population. They represented 23 bachelor's degree (40%) and 35 master's degree programs (60%). In comparison, the population was almost evenly divided between bachelor's and master's degree programs (Table 2).

Table 2 Comparison of the Distribution of Degree Awarded in the Population and in the Survey Participants

| <u>Degree Awarded</u> | <u>Frequency in Population</u> | <u>Frequency in Respondents</u> |
|-----------------------|--------------------------------|---------------------------------|
| Bachelors             | 65 (50%)                       | 23 (40%)                        |
| Masters               | 64 (50%)                       | 35 (60%)                        |
| Total                 | 129                            | 58                              |

The survey respondents represented both public and private institutions (Table 3). Fifty-nine percent of the respondents were affiliated with public colleges or universities. Similarly, sixty three percent of the population represented public institutions.

Table 3 Comparison of the Distribution of Sources of Funding in the Population and in the Survey Participants

| <u>Funding Source</u> | <u>Frequency in Population</u> | <u>Frequency in Respondents</u> |
|-----------------------|--------------------------------|---------------------------------|
| Private               | 47 (36%)                       | 23 (40%)                        |
| Public                | 81 (63%)                       | 34 (59%)                        |
| Both                  | 1 ( 1%)                        | 1 ( 1%)                         |
| Total                 | 129                            | 58                              |

The class size for the survey participants ranged from 18 to 107 with a mean of 45. The class size median was 40 and the mode was 32. For the study, class size was categorized by groups of 10, beginning at 30 and ending with greater than 80 (Table 4). The largest group was 31-40 students per class. Twenty three schools were in this category.

Table 4 Class Size Distribution of Survey Participants (n=58)

| <u>Class Size</u> | <u>Frequency</u> |
|-------------------|------------------|
| 0-30              | 8                |
| 31-40             | 23               |
| 41-50             | 10               |
| 51-60             | 4                |
| 61-70             | 5                |
| 71-80             | 2                |
| >80               | 2                |
| No Response       | 4                |

Programs from 27 of the 45 states with physical therapy

programs participated in the Delphi study (Appendix I). All geographical regions of the country were represented. New York had the most schools represented with seven. The states of Delaware, Iowa, Kansas, Kentucky, Louisiana, Maine, Nebraska, North Dakota, and Wisconsin had 100% representation from their programs.

Letters were received from two program directors indicating they would not be able to participate in the study, because it was conducted over the summer months.

#### Round 1

Comments from the participants included modifications, clarifications and additions to the list (Appendix J). The comments were categorized for each of the existing functions (Table 5). The majority of participants did not suggest changes to the wording of the items. The range of agreement was 59-90%, depending on the essential function.

Table 5      Categorization of Comments from Questionnaire 1  
(N=58)

| Essential<br>Function | Comments       |                 |                |
|-----------------------|----------------|-----------------|----------------|
|                       | No Comments(%) | Disagreement(%) | Clarify/Add(%) |
| 1                     | 43 (74)        | 0 (0)           | 15 (26)        |
| 2                     | 34 (59)        | 0 (0)           | 24 (41)        |
| 3                     | 49 (84)        | 0 (0)           | 9 (16)         |
| 4                     | 46 (79)        | 0 (0)           | 12 (21)        |
| 5                     | 37 (64)        | 0 (0)           | 21 (36)        |
| 6                     | 49 (84)        | 0 (0)           | 9 (16)         |
| 7                     | 46 (79)        | 1 (2)           | 11 (19)        |
| 8                     | 52 (90)        | 1 (2)           | 5 (8)          |
| 9                     | 44 (76)        | 1 (2)           | 13 (22)        |

After reviewing the comments, the consultant, a former physical therapy educational program director, assisted with changes to the Round 1 list for Round 2 (Table 6). The modifications and clarifications did not change the focus of the items. For example, the term "personnel" was replaced in the communication skill with "others" to allow inclusion of additional persons students may encounter in patient care. "Appropriate" was added to the evaluation skill to indicate required decision making abilities in the choice of evaluation procedures.

Table 6 Clarifications and Modifications of Round 1 for Round 2 (\*Bold highlighting denotes change)

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Round 1

Utilize appropriate verbal, non-verbal, and written communication with personnel, patients, and families.

Safely, reliably and efficiently perform and record the results of physical therapy procedures used to assess the function of the movement system, including assessment of: (list of procedures)

Develop a plan of care for a patient with a movement system dysfunction.

Demonstrate administrative skills including time management and the utilization of supportive personnel.

Round 2

Utilize appropriate verbal non-verbal, and written communication with patients, families, and **others**.

Safely, reliably and efficiently perform **appropriate** physical therapy procedures used to assess the function of the movement system.

**These may include the assessment of:** (list of procedures)

Develop **and document** a plan of care for a patient with a movement system dysfunction.

Demonstrate **management** skills including **planning, organizing, supervising, delegating, and working as a member of a multi-disciplinary team**.

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Five essential functions were not changed. These included the skills of determining patient needs, performing treatment procedures, demonstrating universal precautions, practicing safely, ethically, and legally, and participating in scientific inquiry. Agreement with stated wording ranged from 76 to 90% on these skills (Table 5).

Four essential functions were added to the list, in accordance with the suggestions of the participants (Table 7). These included psychosocial skills, teaching and learning application, professional development, and ability to apply prevention and health promotion. Three evaluation procedures were also added to the list. These included the assessment of endurance, segmental length and volume, and peripheral nerve function.

Table 7 Additional Essential Functions Added for Round 2

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Recognize the psychosocial impact of dysfunction and disability and integrate the needs of the patient and family into the plan of care.

Apply teaching/learning theories and methods in health care and community environments.

Demonstrate responsibility for lifelong professional growth and development.

Develop and apply programs of prevention and health promotion.

---

Goniometry was removed from the evaluation procedures list because it is the use of a tool for measuring joint motion and joint motion was already on the list. Orthotic fit/use, prosthetic fit/use, wheelchair fit/use and ambulatory device fit/use were combined to form the category of assistive device fit/use. Breath sounds and breathing patterns were combined to form a more general category of the assessment of the pulmonary system.

#### Round 2

Participation for Round 2 of the survey was 100% of those who participated in Round 1. Respondents rated each item utilizing the scale: 4=definitely essential; 3=somewhat essential; 2=somewhat not essential; and 1=definitely not essential. Appendix K lists the frequency distribution of their responses.

The median rating for most items was 4 or "definitely essential." Participation in the process of scientific inquiry and two items in the treatment procedures list had median ratings of 3 or "somewhat essential" (Appendix L). The procedures were massage and taping and wrapping techniques. Consensus was achieved regarding two essential functions: 1) utilizing appropriate verbal, nonverbal, and written communication with patients, families and others; and 2) practicing in a safe, ethical, and legal manner. Both functions were rated "definitely essential" by all

participants responding to those items.

The comments from Round 2 were reviewed (Appendix M). Three participants noted that the procedure "manual therapy" was synonymous with soft tissue mobilization and joint mobilization. The consultant agreed with the comment. Therefore, manual therapy was eliminated from the list for Round 3.

The Round 3 questionnaire was mailed to the participants prior to the return of three late responses to Round 2. When the later responses were analyzed, the median changed on the procedures of massage and traction listed under the sixth essential function. Massage, previously rated "definitely essential," had a median rating of "somewhat essential." Traction, previously rated "somewhat essential," had a median rating of "definitely essential."

### Round 3

Round 3 of the Delphi survey allowed the participants to review the median scores from Round 2 and indicate a final rating of each item. Fifty-two of the 58 participants (90%) responded to Round 3 (Table 8). They represented 31 master's programs (60%) and 21 bachelor's programs (40%). Rounds 1 and 2 were divided in the same percentage as Round 3 in the degree awarded category. The funding source for Round 3 was 32 public (62%) and 20 private (38%). The population was very similarly divided (Table 3).

Table 8 Response Rates for Each Delphi Round

| <u>Delphi Round</u>                   | <u>Number<br/>Contacted</u> | <u>Number<br/>Responding</u> | <u>Percent</u> |
|---------------------------------------|-----------------------------|------------------------------|----------------|
| Initial Request<br>for Existing Lists | 129                         | 9                            | 7              |
| 1st Questionnaire                     | 129                         | 58                           | 45             |
| 2nd Questionnaire                     | 58                          | 58                           | 100            |
| 3rd Questionnaire                     | 58                          | 52                           | 90             |

Participants were reminded of the primary study question: **"What do physical therapy educational program directors think are the essential functions a physical therapy student, as a potential physical therapy practitioner, must be capable of completing with or without reasonable accommodation?"**

Table 9 lists in ranked order, the percentage scores for essential functions rated "definitely essential" by the program directors. The same essential functions that were rated "definitely essential" by all participants in Round 2, remained with full agreement in Round 3. These items were related to communication with patients, families and others and practicing in a safe, ethical, and legal manner. No other items were noted to have full agreement (Appendix N).

Near consensus (95-99%) agreement was noted with two skills: "determining physical therapy needs of any patient with perceived or potential movement dysfunction" and

Table 9      Ranked by Percentage Essential Functions Rated  
Definitely Essential (N=52)

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Essential Function

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Utilize appropriate verbal, non-verbal, and written communication with patients, families and others (100%)

Practice in a safe, ethical, and legal manner (100%)

Determine the physical therapy needs of any patient with potential movement dysfunction (98%)

Demonstrate ability to apply universal precautions (96%)

Safely, reliably and efficiently perform appropriate physical therapy procedures used to assess the function of the movement system (92%)

Perform treatment procedures in a manner that is appropriate to the patient's status and desired goals (90%)

Develop and document a plan of care for a patient with movement dysfunction (88%)

Recognize the psychosocial impact of dysfunction and disability and integrate the needs of the patient and family into the plan of care (88%)

Demonstrate responsibility for lifelong professional growth and development (88%)

Demonstrate management skills including planning, organizing, supervising, delegating, and working as a member of a multi-disciplinary team (81%)

Develop and apply programs of prevention and health promotion (79%)

Apply teaching/learning theories and methods in health care and community environments (75%)

Participate in the process of scientific inquiry (50%)

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"applying universal precautions." The performance of assessment procedures and treatment procedures were rated "definitely essential" by at least 90% of the participants. The least agreement was noted in the essential function of participating in scientific inquiry. One half the respondents rated this function as "definitely essential" (Appendix N).

Tables 10 and 11 list the ranked percentage scores for the assessment procedures and treatment procedures rated "definitely essential." Agreement was higher in assessment procedures with a range of 71-94%. Ten assessment skills were rated "definitely essential" by at least 90% of the participants. These included the assessment of: functional abilities, vital signs, pain, gait, cranial and peripheral nerve function, strength, balance, movement patterns, posture, and sensation (Table 10).

The range of agreement for treatment procedures rated "definitely essential" was 33-87% (Table 11). The most agreement was in balance training, CPR, and exercise techniques. These items were rated "definitely essential" by 87% of the respondents. The least agreement was noted in taping and wrapping techniques (33%).

The median rating for most items was "definitely essential." The median ratings for the participation in scientific inquiry and two treatment procedures were "somewhat essential." These procedures were traction and taping and wrapping techniques. The median rating of massage, a

Table 10    Ranked Percentage Scores for Assessment Procedures  
                  Rated Definitely Essential (N=52)

| <u>Assessment Procedure</u>           | <u>Percent</u> |
|---------------------------------------|----------------|
| Functional abilities                  | 94             |
| Vital signs                           | 94             |
| Pain                                  | 92             |
| Gait                                  | 92             |
| Cranial and peripheral nerve function | 92             |
| Strength                              | 91             |
| Balance                               | 90             |
| Movement patterns                     | 90             |
| Posture                               | 90             |
| Sensation                             | 90             |
| Endurance                             | 88             |
| Skin and vascular integrity           | 88             |
| Coordination                          | 87             |
| Joint motion/play                     | 87             |
| Wound status                          | 86             |
| Cognitive/mental status               | 85             |
| Soft tissue                           | 83             |
| Tone                                  | 83             |
| Assistive device fit/use              | 79             |
| Developmental Stage                   | 79             |
| Reflexes                              | 79             |
| Segmental length, girth and volume    | 79             |
| Pulmonary system                      | 71             |

Table 11 Ranked Percentage Scores for Treatment Procedures  
Rated Definitely Essential (N=52)

| <u>Treatment Procedure</u>                                    | <u>Percent</u> |
|---------------------------------------------------------------|----------------|
| Balance training                                              | 87             |
| CPR                                                           | 87             |
| Exercise techniques                                           | 87             |
| Gait training                                                 | 85             |
| Activities of daily living training and functional activities | 83             |
| Bed mobility                                                  | 83             |
| Transfers                                                     | 83             |
| Coordination training                                         | 79             |
| Postural correction                                           | 79             |
| Prosthetic/orthotic training                                  | 79             |
| Joint mobilization                                            | 75             |
| Wound care                                                    | 75             |
| Wheelchair prescription and mobility                          | 75             |
| Electrotherapy                                                | 73             |
| Soft tissue mobilization                                      | 73             |
| Techniques of neurosensory approaches                         | 71             |
| Thermal agents                                                | 71             |
| Cardiopulmonary rehabilitation                                | 69             |
| Developmental activities                                      | 69             |
| Hydrotherapy                                                  | 69             |
| Recommendations for architectural adjustments                 | 69             |
| Tilt table                                                    | 65             |
| Massage                                                       | 61             |
| Relaxation techniques                                         | 61             |
| Postural drainage                                             | 59             |
| Traction                                                      | 46             |
| Taping and wrapping techniques                                | 33             |

treatment procedure, changed from "somewhat essential" in Round 2 to "definitely essential" in Round 3. Appendix L provides a comparison of Round 2 and Round 3 median ratings for all items.

Participants were asked to provide rationale for all items in which they were not in agreement with the median rating. The comments are listed in Appendix O. The majority of the comments were related to specific items listed in the treatment procedures list. The most frequent comment was that physical therapist assistants could perform the procedures and therefore, the items were not essential functions of a physical therapist. Several participants commented that developmental activities and techniques of the neurosensory approaches were difficult to rate. One participant responded that they lack valid scientific literature support.

Thirteen participants provided written comments in support of a higher rating for the participation in the process of scientific inquiry. Their comments indicated their opinions concerning the importance of research to the profession.

The Mann-Whitney U Test with continuity correction for ties was utilized to answer the additional study questions: **First, Was there a difference of opinion between the desired essential functions required of entry-level master's versus bachelor's degree programs?**

There was no significant difference of opinion between

the desired essential functions required of entry-level master's versus bachelor's degree programs. The item with the least agreement was the participation in scientific inquiry. For this item, utilizing the Mann Whitney-U Test, and comparing the responses of the two independent groups, the sum of ranks for master's programs was 106 (n=31). For bachelor's programs, the sum of ranks was 71 (n=21). The z score was .145 (p=.88). However, the median response for the participation in scientific inquiry was "definitely essential" in master's programs and "somewhat essential" in bachelor's programs (Appendix P).

The next study question was: **Was there a difference of opinion between the desired essential functions required by public versus private institutions?**

No significant difference of opinion was noted between the responses of program directors of public and private institutions for any essential function. The items with the least agreement were traction and the participation in scientific inquiry (Appendix Q). Utilizing the Mann-Whitney U Test for the procedure traction, the sum of ranks for public institutions was 104 (n=31) and 72 for private institutions (n=21). The z score was .6999 (p=.47). For scientific inquiry, the sum or ranks for public institutions was 105 (n=31) and 72 for private institutions (n=21). The z score was .147 (p=.88).

The last study question was: **Was the size of the program**

**a factor in defining the list of essential functions?**

No significant difference of opinion was noted between the large and small programs. The least agreement was noted in the essential function of participation in scientific inquiry with smaller schools of 40 or less students rating this item higher than schools with greater than 40 students per class (Appendix R). Utilizing the Mann-Whitney U Test for this item, the sum of ranks for larger programs was 103 ( $n=25$ ) and 74 for 40 or less students ( $n=23$ ). The  $z$  score was 1.012 ( $p=0.31$ ).

**Summary of Findings**

Twelve essential functions were rated "definitely essential" by the majority of the participants. These included: 1) communication skills; 2) practice in a safe, ethical, and legal manner; 3) determining PT needs of a patient; 4) demonstrating universal precautions; 5) performing assessment procedures; 6) performing treatment procedures; 7) developing a plan of care; 8) recognizing psychosocial impact and integrating patient needs into the plan; 9) demonstrating professional growth and development; 10) management skills; 11) developing prevention programs; and 12) applying teaching and learning theories. Half of the participants rated the participation in scientific inquiry as "definitely essential."

There was no significant difference of opinion between

the desired essential functions required of entry-level master's and bachelor's degree programs.

Additionally, there was no significant difference of opinion between the desired essential functions required of public and private institutions.

Lastly, the size of the program was not a factor in defining the list of essential functions.

## CHAPTER 5

### DISCUSSION AND CONCLUSIONS

#### Discussion

The ADA was established to empower persons with disabilities in the pursuit of employment opportunities and access to services (Public Law 101-336, 42 U.S.C. §12101). The literature clearly documents the discriminatory practices that were affecting opportunities for persons with disabilities prior to the passage of the ADA (U.S. Bureau of the Census, 1989). The ADA also addresses issues related to "qualified" persons with disabilities in their pursuit of access to programs offered through the public sector. To determine the qualifications, the applicant must "meet the essential eligibility requirements" (ADA, 1990, Title II, Section 201(2)).

This study attempted to identify the essential functions that should be required for graduation of physical therapy students. The Delphi Technique served as an economical method for surveying physical therapy educational program directors since they were separated by distance. The method allowed the participants to identify the functions, rate the items utilizing an ordinal scale, see the median ratings of their peers, and make comments and suggestions without having to be

physically present as a group.

The list of essential functions identified through the study closely resembles the expectations of graduates of physical therapy programs, as outlined in Section 4 of the CAPTE accreditation standards (1991). This substantiates that program directors are familiar with the standards and that accreditation reflects what the program directors believe are the essential functions that should be required of the students.

The list appears to include essential functions that are currently in practice in clinical settings. However, the last analysis of the practice of physical therapy was conducted several years ago. An updated study by the Federation of State Boards of Physical Therapy has just begun (Mirone, 1994).

The findings of this study indicate general uniformity of opinion. In comparing the ratings of the essential functions by programs on the basis of degree awarded, institutional funding source, and class size, the data lead to the conclusion that there is no statistical difference of opinion between the groups.

Ranked at the top of the list was the essential function dealing with legal, safe, ethical practice. This was not surprising because programs prepare students for independent practice as licensed professionals. The licensure boards, in the role of public protection, depend on the educational

programs to only graduate persons who are safe to practice.

The ability to perform assessment procedures was rated higher than the ability to perform treatment procedures. Several participants stated their opinions that many of the treatment procedures could be delegated, but the assessment procedures must be performed by a physical therapist.

The only essential function with differing opinions appeared to be the participation in the process of scientific inquiry. The majority of directors of master's programs rated this item higher than bachelor's program directors. This could be related to the research emphasis in graduate programs in general. Additionally, the graduate PT programs are of longer duration than the bachelor's programs and the increased time may allow greater emphasis on scientific inquiry.

It is also interesting to note that of all the items listed on the survey, only traction and taping and wrapping techniques were rated lower on the scale than scientific inquiry. One particular area of concern with the low rating is that as a profession, the responsibility for critically analyzing the literature cannot be delegated to educators. One of the program directors stated: "We need to be able to validate our existence." Another commented that the participation in scientific inquiry is "necessary" if physical therapy is to be considered a "science". It is possible that some of the participants interpreted "participation" in the process of scientific inquiry as conducting research. Others

may have assumed that this function could include basic skills of reviewing scientific literature.

Attempts to include physical characteristics necessary to complete the essential functions were avoided in the wording of the essential functions. This allows for the use of reasonable accommodations to complete the tasks. Some lists reviewed in the pilot study (Ingram, 1994) included physical characteristics with the functions. For example, "adequate vision" or "adequate hearing," thus eliminating persons with certain types of disabilities from applying to the programs.

The portion of the study question that added difficulty for several participants dealt with the issue of reasonable accommodation. Some participants believed that delegating tasks to a PTA or technician could be interpreted as a reasonable accommodation. A reasonable accommodation at one institution, may not be reasonable at another, depending on resources. One participant suggested that this issue should be the emphasis of the next study.

Lastly, a final comment from one of the program directors raised the question: "How would a prospective student determine whether or not they would be able to carry out the essential functions?" Added to that question is the issue related to faculty also making those judgements during the admissions phase, before a student has been taught how to do the essential functions. At the present time, many programs require applicants to volunteer in physical therapy

settings. This avenue allows applicants opportunities to view clinicians performing many of the essential functions. It would seem reasonable that the volunteer experience would be the first place to begin to answer the question. During this observation time, applicants could explore possible reasonable accommodations that would allow them to perform the skill at a later date. In addition, will educational programs begin practical evaluations of all applicants similar to job testing? It is a concept with merit that deserves additional study.

### Recommendations

#### Use of Results

Recommendations for the use of the results of the study include:

- 1) The results should be used as a reference for physical therapy programs as the respective faculty develop lists of essential functions for their programs. Once developed, each program should publish and share the list with all applicants. An example of a revised list in use at a developing physical therapy program is included in Appendix S. The faculty replaced the word verbal in the first function with "oral" and developed an introductory statement that reinforced safety and efficiency issues.
- 2) During the admissions process, programs should

indicate to all applicants that they should notify the department if they need reasonable accommodations to perform the essential functions.

Based on the review of literature, it also became apparent that limited information is available on reasonable accommodations that could be made for physical therapy students with disabilities. Therefore, the following recommendations follow:

3) A resource manual should be developed providing suggestions of reasonable accommodations for the essential functions. This manual should be updated at least annually in light of changing technology. Technological advancements, especially in the area of computerization, may enhance the capabilities of persons previously thought to be unable to perform the essential functions. The manual cannot serve as a standard for particular disabilities, because each person with a disability has unique concerns.

4) Professional education courses/videos for faculty and clinicians should be developed highlighting alternative methods of completing the essential functions other than the traditional methods generally taught in physical therapy programs. These courses/videos should incorporate the use of various types of reasonable accommodations available.

5) Physical therapy students, as future employers in

the profession should be educated about issues related to physical therapists with disabilities and reasonable accommodations.

#### Future Research

This study focused solely on the opinions of physical therapy educational program directors concerning the essential functions to be required of physical therapy students. Similar research should be conducted to determine the opinions of practicing physical therapy clinicians who serve as clinical instructors of physical therapy students and employers of the future physical therapists. Since a beginning list of essential functions has been developed through this study, the Delphi technique would not be necessary in the clinician study. A single survey could be utilized.

A similar study should be conducted concerning the essential functions that should be required of physical therapist assistant students. The Delphi technique is a recommended method for determining the opinions of PTA educators since a beginning list of functions is not existent.

Additional research is indicated in three areas:

- 1) reasonable accommodations; 2) appropriate assessment; and
- 3) validity of essential functions for successful practice.

#### Conclusions and Supporting Major Findings

The results of this study indicate that there is

agreement among the physical therapy educational program directors concerning the essential functions that should be required of students. Thirteen essential functions were rated "definitely essential" or "somewhat essential" by 92-100% of the participants. All participants rated two of the functions "definitely essential": 1) communication skills with patients, families, and others, and 2) practicing in a safe, legal, and ethical manner. Four additional functions were rated "definitely essential" by at least 90% of the participants.

The least agreement was noted with the participation in scientific inquiry. Master's degree programs and public institutions rated this item higher than bachelor's degree programs and private institutions. Programs with 40 or less students rated this essential function higher than larger programs.

Programs should utilize the results of the study in the development of lists of essential functions required by their respective institutions. The results are not intended to become the mandated list of essential functions that all programs must follow.

In a profession that promotes the abilities of persons with disabilities, it appears only natural that we pioneer opportunities for persons with disabilities who choose to become physical therapists.

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## APPENDIXES

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APPENDIX A  
PHYSICAL THERAPY PROGRAMS

## AMERICAN PHYSICAL THERAPY ASSOCIATION

1111 North Fairfax Street  
Alexandria, VA 22314  
Department of Accreditation

Department of AccreditationKEY

- |                                                                                                  |                                                                           |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| (1A) Bachelor's Degree Course                                                                    | (3) Bachelor's Degree available from<br>affiliating college or university |
| (1B) Accepts candidates for 2nd Bachelor's<br>Degree                                             | (4) Accepts women students only                                           |
| (2A) Certificate Course                                                                          | (5) Entry-level Master's Degree Program                                   |
| (2B) Certificate awarded to graduates already<br>holding a bachelor's degree in another<br>field | (6) Entry-level Doctoral Degree Program                                   |
|                                                                                                  | (PU) Public                                                               |
|                                                                                                  | (PR) Private                                                              |

ACCREDITED BACHELOR, CERTIFICATE AND MASTER'S DEGREE PROGRAMSALABAMAThe University of Alabama at Birmingham  
(5,PU)

Marilyn R. Gossman, Ph.D., P.T.  
Professor and Division Director  
Division of Physical Therapy  
School of Health Related Professions  
The University of Alabama at Birmingham  
SHRP Building, RM D-41  
Birmingham, AL 35294-1270  
(205) 934-3566

University of South Alabama (1A,1B,PU)

Daniel E. Sellers, Ph.D.  
Acting Chair  
Department of Physical Therapy  
College of Allied Health Professions  
University of South Alabama  
Mobile, AL 36688  
(205) 434-3575

ARIZONANorthern Arizona University (5,PU)

Carl DeRosa, Ph.D., P.T.  
Chairman  
Department of Physical Therapy  
C.U. Box 15105  
Northern Arizona University  
Flagstaff, AZ 86011  
(602) 523-4092

ARKANSASUniversity of Central Arkansas (5,PU)

Venita Lovelace-Chandler, Ph.D., P.T.  
Chairman  
Department of Physical Therapy  
University of Central Arkansas  
Conway, AR 72035-0001  
(501) 450-3611

CALIFORNIACalifornia State University at Long Beach  
(1A,PU)

Ray J. Morris, P.T.  
Chair  
Physical Therapy Department  
College of Health and Human Services  
California State University at Long Beach  
1250 Bellflower Boulevard  
Long Beach, CA 90840  
(310) 985-4072

California State University, Fresno (1A,5,PU)

Darlene L. Stewart, P.T.  
Chair  
Physical Therapy Department  
California State University, Fresno  
2345 E. San Ramon  
Fresno, CA 93740-0029  
(209) 278-2022

## List 6 - ACCREDITED PHYSICAL THERAPIST PROGRAMS

CALIFORNIA (cont'd)California State University, Northridge  
(1A,1B,PU)

Douma Redman-Bentley, Ph.D., P.T.  
Director

Department of Health Science - HEALTH  
California State University, Northridge  
Northridge, CA 91330  
(818) 885-3101

Chapman University (5,PR)

Judith S. Canfield, Ed.D., P.T.  
Director

School of Physical Therapy

Chapman University

333 N. Glassell

Orange, CA 92666

(714) 744-7620

(714) 997-6786 (Admissions)

Loma Linda University (5,PR)

Edd J. Ashley, Ed.D., P.T.

Chairman

Department of Physical Therapy

School of Allied Health Professions

Loma Linda University

Loma Linda, CA 92350

(714) 824-4632

Mount St. Mary's College (1A,1B,4,5,PR)

Cynthia Moore Swartz, M.S., P.T.

Chair

Department of Physical Therapy

Mount St. Mary's College

12001 Chalon Road

Los Angeles, CA 90049

(310) 471-9519

Samuel Merritt College (5,PR)

Martina J. Jewell, Ph.D., P.T.

Chairperson

Department of Physical Therapy

Samuel Merritt College

370 Hawthorne Ave.

Oakland, CA 94609

(510) 420-6011

University of California, San Francisco/San Francisco State University (5,PU)

Nancy Dyl, Ph.D., P.T.

Director

Graduate Program in Physical Therapy

School of Medicine

Box 0736

University of California, San Francisco

San Francisco, CA 94143

(415) 476-3146/SF STATE (415) 338-2001

University of Southern California (5,PR)

Helen Hislop, Ph.D., P.T.

Professor and Chair

Department of Physical Therapy

University of Southern California

2025 Zonal Avenue, CSA-208

Los Angeles, CA 90033

(213) 342-2900

University of the Pacific (5,PR)

Carolyn Hultgren, M.P.H., P.T.

Chairman

Department of Physical Therapy

School of Pharmacy

University of the Pacific

Stockton, CA 95211

(209) 946-2886

COLORADOUniversity of Colorado (5,PU)

Pauline Cerasoli, Ed.D., P.T.

Director

Physical Therapy Program

University of Colorado

Health Science Center

4200 E. Ninth Ave., Box E244

Denver, CO 80262

(303) 377-5300

## List #6 - ACCREDITED PHYSICAL THERAPIST PROGRAMS

CONNECTICUT

Quinnipiac College (1A,PR)  
Edward P. Tantorski, MPH., P.T.  
Chairman  
Department of Physical Therapy  
School of Allied Health and Natural Sciences  
Quinnipiac College  
Hamden, CT 06518  
(203) 281-8681

The University of Connecticut (1A,PU)  
Pamela L. Roberts, M.A., P.T.  
Director  
Program in Physical Therapy  
School of Allied Health Professions  
358 Mansfield Road  
The University of Connecticut  
Storrs, CT 06269-2101  
(203) 486-0049

DELAWARE

University of Delaware (5,PU)  
Paul Mettler, Ed.D., P.T.  
Chairman  
Physical Therapy Department  
319 McKinly Laboratory  
University of Delaware  
Newark, DE 19716  
(302) 831-8910

DISTRICT OF COL

Howard University (1A,PR)  
Carole C. Burnett, Ed.M., P.T.  
Chairperson  
Department of Physical Therapy  
College of Allied Health Sciences  
Howard University  
6th and Bryant Sts., NW  
Washington, DC 20059  
(202) 806-7613

FLORIDA

Florida Agricultural and Mechanical University  
(1A)  
Ray Patterson, Ed.D., P.T.  
Director  
Division of Physical Therapy  
Florida A & M University  
Tallahassee, FL 32307  
(904) 599-3828

Florida International University (1A,1B,PU)  
Awilda R. Haskins, M.S., P.T.  
Chairperson  
Department of Physical Therapy  
College of Health  
Florida International University  
Miami, FL 33199  
(305) 348-2266

University of Florida (1A,1B,PU)  
Martha A. Clendenin, Ph.D., P.T.  
Professor and Chairman  
Department of Physical Therapy  
College of Health Related Professions  
Box 100154  
University of Florida  
Gainesville, FL 32610-0154  
(904) 395-0085

University of Miami (5,PR)  
Sherrill H. Hayes, Ph.D., P.T.  
Director  
Division of Physical Therapy  
Department of Orthopaedics & Rehab.  
University of Miami  
School of Medicine  
5915 Ponce de Leon Blvd, 5th Floor  
Coral Gables, FL 33146  
(305) 284-4535

GEORGIA

Emory University (5,PR)  
Pamela A. Cadin, Ed.D., P.T.  
Director  
Division of Physical Therapy  
Emory University  
1441 Clifton Road, SE  
Atlanta, GA 30322  
(404) 727-6138

Georgia State University (1A,1B,PU)  
Barney F. LeVau, Ph.D., P.T.  
Chairman  
Department of Physical Therapy  
University Plaza  
Georgia State University  
Atlanta, GA 30303  
(404) 651-3091

## List 6 - ACCREDITED PHYSICAL THERAPIST PROGRAMS

GEORGIA (cont'd)Medical College of Georgia (1A,1B,PU)

Jan F. Perry, Ed.D., P.T.  
Chairman  
Department of Physical Therapy  
Medical College of Georgia  
Augusta, GA 30912-0800  
(706) 721-2141

IDAHOIdaho State University (5)

Alexander G. Urfer, Ph.D., P.T.  
Professor and Chair  
Department of Physical Therapy  
Box 8002  
Idaho State University  
Pocatello, ID 83209  
(208) 236-4095

ILLINOISNorthern Illinois University (1A,1B,PU)

Mary Jane Harris, M.S., P.T.  
Coordinator  
Physical Therapy Program  
School of Allied Health Professions  
Northern Illinois University  
DeKalb, IL 60115  
(815) 753-1383

Northwestern University (5,PR)

Sally C. Edelsberg, M.S., P.T.  
Director  
Programs in Physical Therapy  
The Medical School  
Northwestern University  
345 E. Superior St., Rm. 1323  
Chicago, IL 60611  
(312) 908-6786/8160

The University of Illinois at Chicago (1A,1B,PU)

Jules M. Rothstein, Ph.D., P.T.  
Head  
Department of Physical Therapy  
The University of Illinois at Chicago  
1919 W. Taylor St., M/C898  
Chicago, IL 60612  
(312) 996-7764

University of Health Sciences/The Chicago

Medical School (1A,1B,PR)  
Elizabeth Coulson, M.B.A., P.T.  
Chairman  
Department of Physical Therapy  
School of Related Health Sciences  
University of Health Sciences/  
The Chicago Medical School  
3333 Green Bay Road  
North Chicago, IL 60064  
(708) 578-3307

INDIANAIndiana University (1A,1B,PU)

Richard L. Hoover, M.S., P.T.  
Chair  
Physical Therapy Program  
Indiana University  
250 N. University Boulevard  
NFS Building  
Indianapolis, IN 46202-5192  
(317) 274-3432

University of Evansville (5,PR)

Cheryl Griffith, M.A., P.T.  
Chairman  
Department of Physical Therapy  
University of Evansville  
1800 Lincoln Avenue  
Evansville, IN 47722  
(812) 479-2345  
800-423-8633 x2468 (Office of Admissions)

University of Indianapolis (5,PR)

Elizabeth Domholdt, Ed.D., P.T.  
Dean  
Krannert Graduate School of Physical Therapy  
University of Indianapolis  
1400 East Hanna Avenue  
Indianapolis, IN 46227-3697  
(317) 788-3500

IOWAThe University of Iowa (5,PU)

David H. Nielsen, Ph.D., P.T.  
Interim Director and Associate Professor  
Physical Therapy Graduate Program  
College of Medicine  
2600 Steindler Building  
The University of Iowa  
Iowa City, IA 52242  
(319) 335-9791

## List #6 - ACCREDITED PHYSICAL THERAPIST PROGRAMS

IOWA (cont'd)University of Osteopathic Medicine & Health Sciences (5,1R)

M. Susan Cigelman, Ed.S., P.T.  
 Director  
 Physical Therapy Program  
 College of Biological Sciences  
 University of Osteopathic Medicine & Health Sciences  
 3200 Grand Avenue  
 Des Moines, IA 50312  
 (515) 271-1634 x5295

KANSASThe University of Kansas Medical Center (5,1U)

Chukuka S. Enwekeke, Ph.D., P.T.  
 Professor and Chairman  
 Department of Physical Therapy Education  
 3056 Robinson Hall  
 The University of Kansas Medical Center  
 3901 Rainbow Boulevard  
 Kansas City, KS 66160-7601  
 (913) 588-6799

Wichita State University (5,1U)

Susan Haurahan, Ph.D., P.T.  
 Director  
 Department of Physical Therapy  
 College of Health Professions  
 Wichita State University  
 Wichita, KS 67260-0043  
 (316) 689-3604

KENTUCKYUniversity of Kentucky Medical Center (1A,1B,1U)

Terry R. Malone, Ed.D., P.T.  
 Director  
 Division of Physical Therapy  
 University of Kentucky Medical Center, Rm. 4, Annex 1  
 Lexington, KY 40536-0079  
 (606) 233-5830

University of Louisville (1A,1B,1U)

Nancy Urbschit, Ph.D., P.T.  
 Program Director  
 Physical Therapy Program  
 School of Allied Health Sciences  
 University of Louisville  
 Carmichael Building  
 525 E. Madison Street  
 Louisville, KY 40292  
 (502) 588-7815

LOUISIANALouisiana State University Medical Center (1A,1U)

Joseph M. McCulloch, Jr., Ph.D., P.T.  
 Head  
 Department of Physical Therapy  
 School of Allied Health Professions  
 Louisiana State University Medical Center  
 P.O. Box 33932  
 Shreveport, LA 71130-3932  
 (318) 674-6820, (504) 568-4288 (New Orleans)

MAINEUniversity of New England (1A)

Joyce MacKinnon, Ed.D., M.P.T.  
 Director  
 Department of Physical Therapy  
 University of New England  
 11 Hills Beach Road  
 Biddeford, ME 04005  
 (207) 283-0171

MARYLANDUniversity of Maryland (1A,1U)

Clarence W. Hardiman, Ph.D., P.T.  
 Chairman  
 Department of Physical Therapy  
 University of Maryland  
 School of Medicine  
 100 Penn Street  
 Room 115  
 Baltimore, MD 21201  
 (410) 706-7720

## List 6 - ACCREDITED PHYSICAL THERAPIST PROGRAMS

MARYLAND (cont'd)University of Maryland Eastern Shore (1A,PU)

Raymond L. Blakely, Ph.D., P.T.  
Associate Professor and Director  
Department of Physical Therapy  
University of Maryland Eastern Shore  
Kiali Hall  
Princess Anne, MD 21853  
(410) 651-6301

MASSACHUSETTSBoston University (5,PR)

Catherine Certo, Sc.D., P.T.  
Program Director  
Department of Physical Therapy  
Sargent College of Allied Health Professions  
Boston University  
635 Commonwealth Avenue  
Boston, MA 02215  
(617) 353-2720

Northeastern University (1A,PR)

David A. Lake, Ph.D., P.T.  
Chairperson  
Department of Physical Therapy  
6 Robinson Hall  
Northeastern University  
360 Huntington Avenue  
Boston, MA 02115  
(617) 437-3160

Simmons College (5,PR)

Diane Jette, M.S., P.T.  
Director  
Graduate School for Health Studies  
Graduate Program in Physical Therapy  
Simmons College  
300 The Fenway  
Boston, MA 02115  
(617) 738-3153

Springfield College (5,PR)

Linda J. Tsoumas, P.T.  
Interim Chairman  
Department of Physical Therapy  
Springfield College  
263 Alden Street  
Springfield, MA 01109  
(413) 748-3369

University of Massachusetts - Lowell (5,PU)

Joseph A. Dorsey, Ed.D., P.T.  
Chairman  
Program in Physical Therapy  
University of Massachusetts - Lowell  
Weed Hall  
South Campus  
Lowell, MA 01854  
(508) 934-4515/4517

MICHIGANAndrews University (5,PR)

C. William Habench, M.A., P.T.  
Chairman  
Department of Physical Therapy  
Andrews University  
Berrin Springs, MI 49104-0420  
(616) 471-2878/(800) 827-AUPT

Grand Valley State University (5,PU)

Jane Toot, Ph.D., P.T.  
Department Chair  
Physical Therapy Department  
Grand Valley State University  
Allendale, MI 49401  
(616) 895-3356

Oakland University (5,PU)

Jane Walter, Ed.D., P.T.  
Director  
Program in Physical Therapy  
School of Health Sciences  
Oakland University  
Rochester, MI 48309-4401  
(313) 370-4041

University of Michigan - Flint (5,PU)

Peter V. Loubert  
Interim Director  
Physical Therapy Department  
School of Health Professions and Studies  
University of Michigan - Flint  
Flint, MI 48502-2186  
(313) 762-3373

Wayne State University (1A,1B,PU)

Dorothy Skinner, Ph.D.  
Deputy Dean  
College of Pharmacy and Allied Health Professions  
Department of Physical Therapy  
Wayne State University  
Detroit, MI 48202  
(313) 577-1432

## List #6 - ACCREDITED PHYSICAL THERAPIST PROGRAMS

MINNESOTAMayo School of Health Related Sciences (5,PR)

James Carey, Ph.D., P.T.  
 Program Director  
 Physical Therapy Program  
 Mayo School of Health Related Sciences  
 1104 Siebens Building  
 Rochester, MN 55905  
 (507) 284-2054

The College of St. Scholastica (5,PR)

Sandra Marden-Lokken, M.A., P.T.  
 Acting Chair  
 Department of Physical Therapy  
 College of St. Scholastica  
 1200 Kenwood Avenue  
 Duluth, MN 55811  
 (218) 723-6055/6285

University of Minnesota (1A,1B,PU)

Glenn Scudder, M.S., P.T.  
 Interim Director  
 Program in Physical Therapy  
 Box 388 UMIIC  
 University of Minnesota  
 Minneapolis, MN 55455  
 (612) 626-5517

MISSISSIPPIUniversity of Mississippi Medical Center (1A,1B,PU)

Neva F. Greenwald, M.S.P.H., P.T.  
 Chairman  
 Physical Therapy Department  
 School of Health Related Professions  
 University of Mississippi Medical Center  
 2500 N. State Street  
 Jackson, MS 39216  
 (601) 984-6330

MISSOURIMaryville University (1A,PR)

Carolyn V. Rees, Ed.D., P.T.  
 Program Director  
 Department of Physical Therapy  
 Maryville University  
 13550 Conway Road  
 St. Louis, MO 63141  
 (314) 576-9523

Rockhurst College (5,PR)

Ellen F. Spake, P.T.  
 Director  
 Physical Therapy Program  
 Rockhurst College  
 1100 Rockhurst Road  
 Kansas City, MO 64110  
 (816) 926-4059

Southwest Baptist University (1,PR)

Keith Gaden, Ph.D., P.T.  
 Program Director  
 Department of Physical Therapy  
 Southwest Baptist University  
 1601 S. Springfield  
 Bolivar, MO 65613-2496  
 (417) 326-1672

St. Louis University Medical Center (1A,1B,PR)

Irma Ruebling, M.A., P.T.  
 Chairman  
 Department of Physical Therapy  
 St. Louis University Medical Center  
 1504 South Grand Blvd.  
 Room 306  
 St. Louis, MO 63104  
 (314) 577-8505

University of Missouri (1A,1B,PU)

Marilyn Sanford, Ph.D., P.T.  
 Director  
 Physical Therapy Program  
 School of Health Related Professions  
 University of Missouri - Columbia  
 121 Lewis Hall  
 Columbia, MO 65211  
 (314) 882-7103

Washington University (5,PR)

Susan S. Deusinger, Ph.D., P.T.  
 Director  
 Program in Physical Therapy  
 Washington University  
 School of Medicine  
 4525 Scott Avenue  
 Room 3404  
 St. Louis, MO 63110  
 (314) 286-1400

## List 6 - ACCREDITED PHYSICAL THERAPIST PROGRAMS

MONTANA

The University of Montana (1A,PU)  
 Todd Cochran, Ph.D.  
 Acting Chairman  
 Physical Therapy Program  
 The University of Montana  
 Missoula, MT 59812  
 (406) 243-4753

NEBRASKA

University of Nebraska Medical Center (5,PU)  
 Patricia Hageman, M.S., P.T.  
 Assistant Professor and Director  
 Division of Physical Therapy Education  
 University of Nebraska College of Medicine  
 600 South 42nd  
 Omaha, NE 68198-4420  
 (402) 559-4259

NEW JERSEY

Kean College of New Jersey/University of  
 Medicine & Dentistry of New Jersey (1A,1B,PU)  
 Alma Merians, Ph.D., P.T.  
 Director  
 Physical Therapy Program  
 School of Health Related Professions  
 University of Medicine & Dentistry of New Jersey  
 65 Bergen Street  
 Newark, NJ 07107-3001  
 (201) 982-5272

Rutgers, The State University of New Jersey,  
 Graduate School-Camden/University of  
 Medicine & Dentistry of New Jersey (5,PU)  
 Katherine LeGuin White, Ph.D., P.T.  
 Program Director  
 M.P.T. Program  
 Rutgers University, UM&D  
 UMDNJ - SIIRP  
 401 Haddon Ave.  
 Camden, NJ 08103-1506  
 (609) 964-2690

Stockton State College (1A,1B,PU)  
 Bess Kathrins, M.S., P.T.  
 Associate Professor and Director  
 Physical Therapy Program  
 Stockton State College  
 Jim Leeds Road  
 Pomona, NJ 08240  
 (609) 652-4261

NEW MEXICO

University of New Mexico (1A,1B,PU)  
 Stanley Geel, Ph.D., P.T.  
 Director  
 Division of Physical Therapy  
 University of New Mexico  
 School of Medicine  
 Albuquerque, NM 87131  
 (505) 277-5755

NEW YORK

Columbia University (5,PR)  
 Joan Edelstein, M.A., P.T.  
 Director  
 Program in Physical Therapy  
 Columbia University  
 630 West 168th Street  
 New York, NY 10032  
 (212) 305-3781

D'Youville College (5,PR)  
 Susan Bennett, Ed.D., P.T.  
 Director  
 Physical Therapy Program  
 D'Youville College  
 One D'Youville Square  
 320 Porter Avenue  
 Buffalo, NY 14201-1084  
 (716) 881-7624

Daemen College (1A,PR)  
 Richard Schweichler, P.T.  
 Program Director  
 Physical Therapy Department  
 Daemen College  
 4380 Main Street  
 Amherst, NY 14226  
 (716) 839-3600

NEW YORK (cont'd)

Hunter College (1A,2B,PU)  
 Gary Krasilovsky, Ph.D., P.T.  
 Assistant Professor and Director  
 Physical Therapy Program  
 School of Health Sciences  
 Hunter College  
 425 East 25th Street  
 New York, NY 10010  
 (212) 481-4469

Ithaca College (5,PR)

Michael A. Pagliarulo, Ed.D., P.T.  
Director  
Department of Physical Therapy  
Ithaca College  
Ithaca, NY 14850-7183  
(607) 274-3342  
(607) 274-3124 (Student inquiries)

Long Island University (5,PR)

William M. Susman, Ph.D., P.T.  
Associate Professor and Director  
Division of Physical Therapy  
Long Island University  
University Plaza  
Brooklyn, NY 11201  
(718) 488-1063

New York University (1A,1B,PR)

Andrew L. McDonough, P.T.  
Chairperson  
Physical Therapy Department  
New York University  
Weissman Building, 2nd Floor  
421 First Avenue  
New York, NY 10010  
(212) 998-9400

Russell Sage College (1A,4,PR)

James Brennan, P.T.  
Program Director  
Department of Physical Therapy  
Russell Sage College  
Troy, NY 12180  
(518) 276-3266

State University of New York at Buffalo (1A,1B,PU)

Susan Rochrig, Ph.D., P.T.  
Program Director  
Physical Therapy Program  
State University of New York at Buffalo  
Department of Physical Therapy and Exercise Science  
410 Kimball Tower - Main Street Campus  
Buffalo, NY 14214  
(716) 829-3342

State University of New York at Stony Brook (1A,1B,PU)

Clifton S. Meredday, Ph.D., P.T.  
Chairman  
Department of Physical Therapy  
School of Health Technology and Management  
Health Sciences Center  
State University of New York at Stony Brook  
Stony Brook, NY 11794  
(516) 444-3251

State University of New York Health Science Center at Brooklyn (1A,1B,PU)

Joseph A. Balogun, Ph.D., P.T.  
Professor and Chairman  
Physical Therapy Program  
State University of New York  
Health Science Center at Brooklyn  
450 Clarkson Avenue, Box 16  
Brooklyn, NY 11203-2098  
(718) 270-7720

State University of New York Health Science Center at Syracuse (1A,1B,PU)

Charles E. Meacci, Ed.D., P.T.  
Chairman  
Department of Physical Therapy  
College of Health Related Professions  
SUNY Health Science Center at Syracuse  
750 E. Adams Street  
Syracuse, NY 13210  
(315) 464-5101

Touro College (5,PR)

Jill Auster-Liebhaber, M.A., P.T.  
Director  
Physical Therapy Program  
Barry Z. Levine School of Allied Health Sciences  
Touro College  
Building 10  
135 Carman Road  
Dix Hills, NY 11746  
(516) 673-3200

NORTH CAROLINA

Duke University (5,PR)

Robert C. Bartlett, M.S., P.T.  
Professor and Chairman  
Graduate Program in Physical Therapy  
Duke University  
P.O. Box 3965  
Durham, NC 27710  
(919) 684-2445/2650  
(919) 684-3135 (Student inquiries)

East Carolina University (1A,1B,PU)

Bruce C. Albright, Ph.D., P.T.  
Chairperson  
Department of Physical Therapy  
East Carolina University  
School of Allied Health Sciences  
Greenville, NC 27858-4353  
(919) 757-4450

University of North Carolina at Chapel Hill (1A,1B,PU)

Darlene K. Sekerak, P.T.  
Director  
Division of Physical Therapy  
University of North Carolina at Chapel Hill  
Medical School Wing E 22211-CB #7135  
Chapel Hill, NC 27599-7135  
(919) 966-4708

NORTH DAKOTAUniversity of North Dakota (5,PU)

Thomas M. Mohr, Ph.D., P.T.  
Professor and Interim Chair  
Department of Physical Therapy  
School of Medicine  
University of North Dakota  
P.O. Box 9037  
Grand Forks, ND 58202-9037  
(701) 777-2831

OHIOCleveland State University (1A,1B,2B,PU)

John Jezlowski, Ph.D., P.T.  
Director  
Physical Therapy Department  
Department of Health Sciences  
Cleveland State University  
1983 East 24th Street, Penn Tower 609  
Cleveland, OH 44115  
(216) 687-3567

Medical College of Ohio In Consortium with:Dowling Green State University and TheUniversity of Toledo (1A,1B,3,PU)

Catherine L. Hornbeck, M.S., P.T.  
Director  
Physical Therapy Program  
Medical College of Ohio  
2601 Ida Marie Dowling Hall  
P.O. Box 10008  
Toledo, OH 43699-0008  
(419) 381-3518

Ohio State University (1A,1B,2B,PU)

Lynn Colby  
Acting Director  
Division of Physical Therapy  
Ohio State University  
306 Allied Medical Professions  
1583 Perry Street  
Columbus, OH 43210  
(614) 292-5921

Ohio University (1A,1B,PU)

Marleen McClelland, Ph.D.  
Acting Program Director (until 12/31)  
School of Physical Therapy  
Room 199 Convocation Center  
Ohio University  
Athens, OH 45701  
(614) 593-1225

OKLAHOMALangston University (1A,PU)

Dr. Denise Chapman  
Acting Program Director  
Physical Therapy Program  
Langston University  
School of Nursing and Health Professions  
Langston, OK 73050  
(405) 466-3411

University of Oklahoma (1A,PU)

Martha J. Ferretti, M.P.T.  
Chairman  
Department of Physical Therapy  
College of Allied Health  
Health Science Center  
University of Oklahoma  
P.O. Box 26901  
Oklahoma City, OK 73190  
(405) 271-2131

OREGON

Pacific University (5,PR)  
Daiva Banaitis, Ph.D., P.T.  
Professor and Director  
School of Physical Therapy  
Pacific University  
2043 College Way  
Forest Grove, OR 97116  
(503) 357-6151, Ext. 2362

PENNSYLVANIA

Beaver College (5,PR)  
Rebecca L. Craik, Ph.D., P.T.  
Chairman  
Department of Physical Therapy  
Beaver College  
Glenside, PA 19038  
(215) 572-2900

Duquesne University (5,PR)  
Robert C. Morgan, Ph.D., P.T.  
Chairman  
Department of Physical Therapy  
School of Health Sciences  
Duquesne University  
109 Health Sciences Building  
Pittsburgh, PA 15282  
(412) 396-5542

Gannon University (5,PR)  
Susan A. Bemis, Ed.D., P.T.  
Director  
Department of Physical Therapy  
College School of Health Sciences  
Gannon University  
University Square  
Erie, PA 16541-0001  
(814) 871-5639

Hahnemann University (5,PR)  
Risa Granick, Ed.D., P.T.  
Director  
Programs in Physical Therapy  
Hahnemann University  
MS 502  
201 North 15th Street  
Philadelphia, PA 19102  
(215) 762-1750

Philadelphia College of Pharmacy and Science (5,PU)  
Kevin A. Cody, Ph.D., P.T.  
Chairman  
Physical Therapy Program  
43rd Street and Woodland Avenue  
Philadelphia College of Pharmacy and Science  
Philadelphia, PA 19104  
(215) 596-8849  
(215) 596-8810 (Admissions info/applications)

Slippery Rock University (5,PU)  
Jan K. Richardson, Ph.D., P.T.  
Director  
School of Physical Therapy  
Slippery Rock University  
Suite 100, North Road  
Slippery Rock, PA 16057  
(412) 738-2080

Temple University (5,PU)  
Ann Van Sant, Ph.D., P.T.  
Chair  
Department of Physical Therapy  
College of Allied Health Professions  
Temple University  
3307 North Broad Street  
Philadelphia, PA 19140  
(215) 221-4815/6

Thomas Jefferson University (5,PR)  
Roger M. Nelson, Ph.D., P.T.  
Professor and Chairman  
Department of Physical Therapy  
College of Allied Health Sciences  
Thomas Jefferson University  
EDISON 830  
130 South 9th Street  
Philadelphia, PA 19107  
(215) 955-8025

University of Pittsburgh (5,PU)  
Ray G. Burdett, Ph.D., P.T.  
Acting Chairman  
Department of Physical Therapy  
101 Pennsylvania Hall  
University of Pittsburgh  
Pittsburgh, PA 15261  
(412) 624-8933  
(412) 624-8990 (Admissions)

PENNSYLVANIA (cont'd)

University of Scranton (5,PU)  
 Carolyn E. Barnes, Ph.D., P.T.  
 Professor and Chair  
 Department of Physical Therapy  
 University of Scranton  
 800 Linden Street  
 Scranton, PA 18510-4586  
 (717) 941-7494

RHODE ISLAND

The University of Rhode Island (5)  
 Mark J. Rowinski, Ph.D., P.T.  
 Director  
 Physical Therapy Program  
 Independence Square II  
 The University of Rhode Island  
 Kingston, RI 02881-0180  
 (401) 702-5411

SOUTH CAROLINA

Medical University of South Carolina (1A,1B,PU)  
 Lisa K. Saladin, DMRT, MSC  
 Director  
 Physical Therapy Program  
 Medical University of South Carolina  
 171 Ashley Avenue  
 Charleston, SC 29425  
 (803) 792-2961

SOUTH DAKOTA

University of South Dakota (5,PU)  
 Mary Sand, M.P.A., P.T.  
 Program Director  
 Department of Physical Therapy  
 University of South Dakota  
 25 South Plum  
 Vermillion, SD 57069  
 (605) 677-5915

TENNESSEE

Tennessee State University (1A,1B,PU)  
 Dolly Swisher, M.Div., P.T., CMT  
 Department Head  
 Physical Therapy Department  
 Tennessee State University  
 3500 John A. Merritt Blvd.  
 Nashville, TN 37209-1561  
 (615) 320-3185

The University of Tennessee at Chattanooga  
(1A,1B,PU)

Larry J. Tillman, Ph.D.  
 Acting Department Head  
 Department of Physical Therapy  
 The University of Tennessee at Chattanooga  
 615 McCallie Ave.  
 Chattanooga, TN 37403-2598  
 (615) 755-4747

University of Tennessee (1A,1B,PU)

Barbara H. Connolly, Ed.D., P.T.  
 Associate Professor and Chairman  
 Department of Rehabilitation Sciences  
 University of Tennessee  
 822 Beale Street, 3rd Floor  
 Memphis, TN 38163  
 (901) 528-5888/9

TEXASSouthwest Texas State University (1A,1B,PU)

Barbara Sanders, Ph.D., P.T.  
 Program Director  
 Physical Therapy Program  
 Southwest Texas State University  
 Health Science Center  
 601 University Drive  
 San Marcos, TX 78666  
 (512) 245-3400

TEXAS (cont'd)Texas Tech University Health Sciences Center  
(1A,1B,1U)

H. H. Merrifield, Ph.D., P.T.

Chairman

Department of Physical Therapy

School of Allied Health

Texas Tech University Health Sciences Center

Lubbock, TX 79430

(806) 743-3226

Texas Woman's University (5,1U)

Carolyn Rozier, Ph.D., P.T.

Dean

School of Physical Therapy

Texas Woman's University

Box 22487, TWU Station

Denton, TX 76204-0487

(817) 898-2460

U.S. Army-Baylor University (2A,5,1U)

LTC(P) Michael A. Smutok, Ph.D., P.T.

Director

Graduate Program in Physical Therapy

U.S. Army-Baylor University

AMSC Division (HSHIA-MR)

Academy of Health Sciences

US Army Med. Dept. Ctr. and School

Ft. Sam Houston, TX 78234

(512) 221-6187/6457

(703) 756-8139 (Admission Inquiries)

University of Texas Health Science Center at San Antonio (1A,1B,1U)

Pamela E. Stanton, Ed.D., P.T.

Chair

Department of Physical Therapy

University of Texas Health Science Center at San Antonio

7703 Floyd Curl Drive

San Antonio, TX 78284-7781

(210) 567-3150

University of Texas Medical Branch at Galveston (5,1U)

Claire Peel, Ph.D., P.T.

Chairman

Department of Physical Therapy

J28

School of Allied Health Sciences

University of Texas Medical Branch at Galvesto

Galveston, TX 77550

(409) 772-3068

University of Texas Southwestern Medical Center at Dallas (1A,1B,1U)

Renee Brown, M.S., P.T.

Interim Co-Director

Department of Physical Therapy

School of Allied Health Sciences

University of Texas Southwestern Medical Center at Dallas

5323 Harry Hines Blvd.

Dallas, TX 75235

(214) 648-2850

UTAHUniversity of Utah (1A,1B,1U)

Carolee Moncur, Ph.D., P.T.

Co-Director

Division of Physical Therapy

College of Health

1130 Annex, Wing B

University of Utah

Salt Lake City, UT 84112

(801) 581-8681

VERMONTUniversity of Vermont (1A,1B,1U)

Samuel B. Feitelberg, P.T.

Chairperson

Department of Physical Therapy

School of Allied Health Sciences

University of Vermont

Rowell 305

Burlington, VT 05405

(802) 886-1252

VIRGINIAOld Dominion University (5,1U)

George Mailhafer, Ph.D., P.T.

Associate Professor and Director

Program in Physical Therapy

School of Community Health Professions and

Physical Therapy

Old Dominion University

Norfolk, VA 23529-0288

(804) 683-4409

VIRGINIA (cont'd)Shenandoah University (S, PR)

Walter J. Personius, Ph.D., P.T.  
 Professor and Chairman  
 Program in Physical Therapy  
 Shenandoah University  
 SU-MC  
 333 W. Cork Street  
 Winchester, VA 22601  
 (703) 665-2835  
 (703) 665-2838 (Student Inquiries)

Virginia Commonwealth University (1A,5,PU)

Robert L. Lamb, Ph.D., P.T.  
 Chairman  
 Department of Physical Therapy  
 Virginia Commonwealth University  
 Box 224, MCV Station  
 Richmond, VA 23298  
 (804) 786-0234

WASHINGTONEastern Washington University (1A,1B,PU)

Gary J. Smith, Ed.D., P.T.  
 Associate Professor and Chair  
 Department of Physical Therapy  
 Mail Stop 4  
 Eastern Washington University  
 Cheney, WA 99004  
 (509) 359-6659/6435

University of Puget Sound (S,PU)

Lynette Chandler, Ph.D., P.T.  
 Program Director  
 School of Physical Therapy  
 University of Puget Sound  
 1500 N. Warner  
 Tacoma, WA 98416  
 (206) 756-3281  
 (206) 756-3211 (Student inquiries)

University of Washington (1A,1B,PU)

JoAnn McMillan, M.S.Ed., P.T.  
 Head  
 Division of Physical Therapy  
 Department of Rehabilitation Medicine RJ-30  
 University of Washington  
 Seattle, WA 98195  
 (206) 685-7408

WEST VIRGINIAWest Virginia University (1A,PU)

Sandy L. Burkart, P.T., Ph.D.  
 Professor and Chairman  
 Division of Physical Therapy  
 School of Medicine  
 West Virginia University  
 1195 Health Sciences North  
 PO Box 9226  
 Morgantown, WV 26506-9226  
 (304) 293-3610

WISCONSINMarquette University (1A,PR)

Richard H. Jensen, Ph.D., P.T.  
 Director  
 Program in Physical Therapy  
 Marquette University  
 Walter Schroeder Complex  
 Milwaukee, WI 53233  
 (414) 288-7161

University of Wisconsin at LaCrosse (1A,1B,PU)

Patricia A. Wilder, Ph.D., P.T.  
 Associate Professor and Chair  
 Department of Physical Therapy  
 University of Wisconsin at LaCrosse  
 243 Cowley Hall  
 LaCrosse, WI 54601  
 (608) 785-8470

University of Wisconsin-Madison (1A,1B,PU)

Nancy J. Patton, Ph.D., P.T.  
 Interim Coordinator  
 Physical Therapy Program  
 5175 Medical Sciences Center  
 University of Wisconsin-Madison  
 1300 University Avenue  
 Madison, WI 53706-1532  
 (608) 263-7131

APPENDIX B  
INTRODUCTORY LETTER

December 15, 1993

Dear Program Director:

I want to thank you for your participation in the study I conducted during the spring of 1993, related to lists of essential functions physical therapy programs require of their students. I was pleased to have 100 physical therapy programs complete the survey instrument. The results indicated that only 8 physical therapy programs have lists of essential functions. I am continuing with the research in this area for my dissertation. I will be utilizing the Delphi Technique to reach consensus on the essential functions that should be required of physical therapy students. I would very much appreciate your assistance with this study. The results will serve as a resource for programs to utilize in developing their lists. It is not intended to serve as the sole list of essential functions all programs should utilize.

In the first phase of the study, I would like for any programs that have lists of essential functions to send me a current copy by **January 15, 1994**. Anonymity of programs is assured. A self-addressed stamped envelope is enclosed for your convenience. A number coding system is utilized on the envelope only to determine which schools have returned surveys. The envelope and the questionnaire will be separated as soon as they arrive.

Thank you again for assisting me in this study. I hope it will be useful to you and your program. If you have any questions, please contact me at 615-755-4767.

Sincerely,

Debbie Ingram, M.Ed., P.T.

APPENDIX C

ROUND 1 QUESTIONNAIRE AND COVER LETTER

April 19, 1994

Dear Physical Therapy Program Director:

I am a faculty member of the physical therapy program at the University of Tennessee at Chattanooga and a doctoral student at the University of Tennessee. For my dissertation, I am conducting research on the opinions of the program directors concerning the essential functions that students, as potential physical therapy practitioners, should be able to complete with or without reasonable accommodation. It was recommended at the workshops on the Americans with Disabilities Act at Combined Sections Meeting and Annual Conference in 1993 that all physical therapy educational programs develop lists of essential functions required of students. This process will allow applicants to physical therapy programs the opportunity to make initial qualification determinations. Without lists, there is a risk that programs could make decisions denying admissions to qualified applicants with disabilities.

I have selected the Delphi Technique for this study. Two months ago, I requested all programs with existing lists of essential functions to send me a copy. For Round 1, I have compiled some common items from the existing lists. This round requests that you review the items and add additional items to the list and/or make modifications to the items included on the list. Round 2 of the study will provide you the opportunity to rate items utilizing a Likert scale. In Round 3, you will be given the opportunity to view the median ratings and make final ratings on each item.

The results of the study will be shared with all participants and the Special Interest Group for Physical Therapists with Disabilities. I hope you will choose to participate in this study. Your participation is voluntary and you may withdraw from participation at any time. If you choose to not participate in Round 1, you will not be included in Round 2. The study has received approval from the human subjects review committees. Your responses will remain confidential. I am utilizing a number coding system for tracking purposes only.

Please complete Round 1 and return in the enclosed prepaid reply envelope by **May 13, 1994**. If you have any questions, please contact me at 615-755-4767. Thank you for your time and the courtesy of your assistance.

Sincerely,

Debbie Ingram, M.Ed., P.T.

**Essential Functions Required of Physical Therapy Students  
Questionnaire #1**

Please complete round 1 of the survey now. It will take approximately 10 minutes to complete. Return it directly to Debbie Ingram in the enclosed prepaid reply envelope by May 13, 1994. Individual replies will be treated confidentially.

---

**Demographic Information**

Please complete the following information about your physical therapy program.

- 1) Type of Entry-Level PT Degree Awarded  
(If your program is in the process of converting to entry-level master's, please respond to this questionnaire based upon the next class you will admit.)  
  
\_\_\_\_\_ Master's                      \_\_\_\_\_ Bachelor's
  
- 2) Type of Institution  
  
\_\_\_\_\_ Private                      \_\_\_\_\_ Public
  
- 3) Class Size                      \_\_\_\_\_

**Essential Functions**

The question for this study is:

**What are the essential functions a physical therapy student, as a potential physical therapy practitioner, must be capable of completing with or without reasonable accommodation?**

The objective of Round 1 is to develop a complete list of essential functions. Please review each of the following potential essential functions which were derived from existing lists. Below each item, you may add modifications and/or clarifications in the comments section. At the end of the survey, add additional essential functions which have been omitted from the list. You will have an opportunity to rate the items during Round 2 of the study.

- 1) Utilize appropriate verbal, non-verbal, and written communication with personnel, patients, and families.

Comments:

2) Safely, reliably and efficiently perform and record the results of physical therapy procedures used to assess the function of the movement system, including assessment of:

cognitive/mental status  
vital signs  
skin and vascular integrity  
wound status  
goniometry  
girth  
sensation  
strength  
tone  
reflexes  
movement patterns  
coordination  
balance  
developmental stage  
soft tissue  
joint motion/play  
pain  
cranial nerve integrity  
posture  
gait  
functional abilities  
orthotic fit/use  
prosthetic fit/use  
wheelchair fit/use  
ambulatory device fit/use  
breath sounds  
breathing patterns  
others: (please add)

Comments:

3) Determine the physical therapy needs of any patient with perceived or potential movement dysfunction.

Comments:

4) Develop a plan of care for a patient with a movement system dysfunction.

Comments:

5) Perform treatment procedures in a manner that is appropriate to the patient's status and desired goals. These may include:

- techniques of the neurosensory approaches
- developmental activities
- balance training
- coordination training
- positioning techniques
- exercise techniques
- soft tissue mobilization
- joint mobilization
- activities of daily living training and functional activities
  - tilt table
  - transfers
  - bed mobility
  - wheelchair prescription and mobility
  - gait training
  - prosthetic/orthotic training
  - recommendations for architectural adjustments
- manual therapy
- thermal agents
- hydrotherapy
- electrotherapy
- massage
- taping and wrapping techniques
- postural correction
- traction
- wound care
- postural drainage
- relaxation exercises
- cardiopulmonary rehabilitation
- CPR
- others: (please add)

Comments:

6) Demonstrate ability to apply universal precautions.

Comments:

7) Demonstrate administrative skills including time management and the utilization of supportive personnel.

Comments:

8) Practice in a safe, ethical, and legal manner.

Comments:

9) Participate in the process of scientific inquiry.

Comments:

Additional Essential Functions:

Return survey to Debbie Ingram, UTC Physical Therapy Dept.,  
615 McCallie Ave., Chattanooga, TN 37403

Name of Person Completing Survey\_\_\_\_\_

(This information is needed to assure that Round 2 will be sent to the appropriate person. Your responses will remain confidential.)

APPENDIX D  
ROUND 2 QUESTIONNAIRE AND COVER LETTER

June 17, 1994

Dear Physical Therapy Program Director:

Thank you for participating in Round 1 of the Delphi survey pertaining to the essential functions required of physical therapy students. I compiled the comments from Round 1 and made some revisions based upon your suggestions.

Round 2 of the process allows you the opportunity to rate the items utilizing a Likert-type scale with four categories: definitely essential; somewhat essential; somewhat not essential and not essential.

Please complete Round 2 and return it in the enclosed prepaid reply envelope by **July 15, 1994**. I am again utilizing a number coding system for tracking purposes. Your responses will remain confidential. Round 3 will allow you the opportunity to review the median rating each item received. You will then be given a final opportunity to change your rating of any of the items. If you have any questions, please contact me at 615-755-4767. Thank you for your time and the courtesy of your assistance. I believe this is a worthwhile project for our profession and for students with disabilities.

Sincerely,

Debbie Ingram, M.Ed., P.T.

## Essential Functions Required of Physical Therapy Students Questionnaire #2

Please complete round 2 of the survey now. It will take approximately 10 minutes to complete. Return it directly to Debbie Ingram in the enclosed prepaid reply envelope by July 15, 1994. Individual replies will be treated confidentially.

The question for this study is:

**What are the essential functions a physical therapy student, as a potential physical therapy practitioner, must be capable of completing with or without reasonable accommodation?**

Circle the category that best describes your opinion for each item. Utilize the following scale:

4=definitely essential  
3=somewhat essential  
2=somewhat not essential  
1=not essential

| Essential Functions                                                                                                                     | Rating |   |   |   |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------|---|---|---|
| 1. Utilize appropriate verbal, non-verbal, and written communication with patients, families and others.                                | 4      | 3 | 2 | 1 |
| 2. Safely, reliably and efficiently perform appropriate physical therapy procedures used to assess the function of the movement system. | 4      | 3 | 2 | 1 |

These may include the assessment of:

|                                    |   |   |   |   |
|------------------------------------|---|---|---|---|
| cognitive/mental status            | 4 | 3 | 2 | 1 |
| vital signs                        | 4 | 3 | 2 | 1 |
| skin and vascular integrity        | 4 | 3 | 2 | 1 |
| wound status                       | 4 | 3 | 2 | 1 |
| endurance                          | 4 | 3 | 2 | 1 |
| segmental length, girth and volume | 4 | 3 | 2 | 1 |
| sensation                          | 4 | 3 | 2 | 1 |
| strength                           | 4 | 3 | 2 | 1 |

|                                                                                                                                                      |   |   |   |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|
| tone                                                                                                                                                 | 4 | 3 | 2 | 1 |
| reflexes                                                                                                                                             | 4 | 3 | 2 | 1 |
| movement patterns                                                                                                                                    | 4 | 3 | 2 | 1 |
| coordination                                                                                                                                         | 4 | 3 | 2 | 1 |
| balance                                                                                                                                              | 4 | 3 | 2 | 1 |
| developmental stage                                                                                                                                  | 4 | 3 | 2 | 1 |
| soft tissue                                                                                                                                          | 4 | 3 | 2 | 1 |
| joint motion/play                                                                                                                                    | 4 | 3 | 2 | 1 |
| pain                                                                                                                                                 | 4 | 3 | 2 | 1 |
| cranial and peripheral nerve<br>function                                                                                                             | 4 | 3 | 2 | 1 |
| posture                                                                                                                                              | 4 | 3 | 2 | 1 |
| gait                                                                                                                                                 | 4 | 3 | 2 | 1 |
| functional abilities                                                                                                                                 | 4 | 3 | 2 | 1 |
| assistive device fit/use                                                                                                                             | 4 | 3 | 2 | 1 |
| pulmonary system                                                                                                                                     | 4 | 3 | 2 | 1 |
| 3. Determine the physical therapy<br>needs of any patient with perceived<br>or potential movement dysfunction.                                       | 4 | 3 | 2 | 1 |
| 4. Develop and document a plan of care<br>for a patient with movement<br>dysfunction.                                                                | 4 | 3 | 2 | 1 |
| 5. Recognize the psychosocial impact<br>of dysfunction and disability and<br>integrate the needs of the patient<br>and family into the plan of care. | 4 | 3 | 2 | 1 |
| 6. Perform treatment procedures in a<br>manner that is appropriate to the<br>patient's status and desired goals.                                     | 4 | 3 | 2 | 1 |
| These may include:                                                                                                                                   |   |   |   |   |
| techniques of the neurosensory<br>approaches                                                                                                         | 4 | 3 | 2 | 1 |

|                                                                  |   |   |   |   |
|------------------------------------------------------------------|---|---|---|---|
| developmental activities                                         | 4 | 3 | 2 | 1 |
| balance training                                                 | 4 | 3 | 2 | 1 |
| coordination training                                            | 4 | 3 | 2 | 1 |
| positioning techniques                                           | 4 | 3 | 2 | 1 |
| exercise techniques                                              | 4 | 3 | 2 | 1 |
| soft tissue mobilization                                         | 4 | 3 | 2 | 1 |
| joint mobilization                                               | 4 | 3 | 2 | 1 |
| activities of daily living training<br>and functional activities | 4 | 3 | 2 | 1 |
| tilt table                                                       | 4 | 3 | 2 | 1 |
| transfers                                                        | 4 | 3 | 2 | 1 |
| bed mobility                                                     | 4 | 3 | 2 | 1 |
| wheelchair prescription and<br>mobility                          | 4 | 3 | 2 | 1 |
| gait training                                                    | 4 | 3 | 2 | 1 |
| prosthetic/orthotic training                                     | 4 | 3 | 2 | 1 |
| recommendations for architectural<br>adjustments                 | 4 | 3 | 2 | 1 |
| manual therapy                                                   | 4 | 3 | 2 | 1 |
| thermal agents                                                   | 4 | 3 | 2 | 1 |
| hydrotherapy                                                     | 4 | 3 | 2 | 1 |
| electrotherapy                                                   | 4 | 3 | 2 | 1 |
| massage                                                          | 4 | 3 | 2 | 1 |
| taping and wrapping techniques                                   | 4 | 3 | 2 | 1 |
| postural correction                                              | 4 | 3 | 2 | 1 |
| traction                                                         | 4 | 3 | 2 | 1 |
| wound care                                                       | 4 | 3 | 2 | 1 |
| postural drainage                                                | 4 | 3 | 2 | 1 |

|                                                                                                                                                 |   |   |   |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|
| relaxation techniques                                                                                                                           | 4 | 3 | 2 | 1 |
| cardiopulmonary rehabilitation                                                                                                                  | 4 | 3 | 2 | 1 |
| CPR                                                                                                                                             | 4 | 3 | 2 | 1 |
| 7. Demonstrate ability to apply universal precautions.                                                                                          | 4 | 3 | 2 | 1 |
| 8. Demonstrate management skills including planning, organizing, supervising, delegating, and working as a member of a multi-disciplinary team. | 4 | 3 | 2 | 1 |
| 9. Practice in a safe, ethical, and legal manner.                                                                                               | 4 | 3 | 2 | 1 |
| 10. Participate in the process of scientific inquiry.                                                                                           | 4 | 3 | 2 | 1 |
| 11. Apply teaching/learning theories and methods in health care and community environments.                                                     | 4 | 3 | 2 | 1 |
| 12. Demonstrate responsibility for lifelong professional growth and development.                                                                | 4 | 3 | 2 | 1 |
| 13. Develop and apply programs of prevention and health promotion.                                                                              | 4 | 3 | 2 | 1 |

Additional Comments:

Return the survey to Debbie Ingram, UTC Physical Therapy  
Dept., 615 McCallie Ave., Chattanooga, TN 37403

APPENDIX E  
ROUND 2 FOLLOW-UP LETTER

July 25, 1994

Dear Physical Therapy Program Director:

Thank you for participating in Round 1 of the Delphi survey pertaining to the essential functions required of physical therapy students. I mailed Round 2 of the survey to you in June, but I did not receive your response. I believe this is a worthwhile project for our profession and I hope you will continue to participate.

Round 2 of the process allows you the opportunity to rate the items utilizing a Likert-type scale with four categories: definitely essential; somewhat essential; somewhat not essential and not essential.

Please complete Round 2 and return it in the enclosed prepaid reply envelope by **August 8, 1994**. I am again utilizing a number coding system for tracking purposes. Your responses will remain confidential. Round 3 will allow you the opportunity to review the median rating each item received. You will then be given a final opportunity to change your rating of any of the items. If you have any questions, please contact me at 615-755-4767. Thank you for your time and the courtesy of your assistance. If you choose not to participate, please send me a note in the postage prepaid envelope.

Sincerely,

Debbie Ingram, M.Ed., P.T.

APPENDIX F  
ROUND 3 QUESTIONNAIRE AND COVER LETTER

August 8, 1994

Dear Physical Therapy Program Director:

Thank you for participating in Rounds 1 and 2 of the Delphi survey pertaining to the essential functions required of physical therapy students. Enclosed is the final round. It allows you the opportunity to review the results of Round 2 and make a final rating of each item.

Please complete Round 3 and return it in the enclosed prepaid reply envelope by **September 5, 1994**. I am again utilizing a number coding system for tracking purposes. Your responses will remain confidential. If you have any questions, please contact me at 615-755-4767. Thank you for your time and the courtesy of your assistance.

Sincerely,

Debbie Ingram, M.Ed., P.T.

**Essential Functions Required of Physical Therapy Students      103**  
**Questionnaire #3**

Please complete Round 3 of the survey now and return in the enclosed prepaid reply envelope by September 5, 1994. Individual replies will be treated confidentially.

The question for this study is:

What are the essential functions a physical therapy student, as a potential physical therapy practitioner, must be capable of completing with or without reasonable accommodation?

Utilizing the following scale, select the category that best describes your opinion for each item.

- 4=definitely essential
- 3=somewhat essential
- 2=somewhat not essential
- 1=not essential

If your final rating of an essential function is different from the group median, please state your reason in the last column.

| <u>Essential Functions</u>                                                                                                              | <u>Group<br/>Median</u> | <u>Your<br/>Previous<br/>Response</u> | <u>Your<br/>New<br/>Response</u> | <u>Reason for<br/>Not Changing<br/>Your Response<br/>If Not the Median</u> |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------------------|----------------------------------|----------------------------------------------------------------------------|
| 1. Utilize appropriate verbal, non-verbal, and written communication with patients, families and others.                                | 4                       |                                       | _____                            |                                                                            |
| 2. Safely, reliably and efficiently perform appropriate physical therapy procedures used to assess the function of the movement system. | 4                       |                                       | _____                            |                                                                            |
| These may include the assessment of:                                                                                                    |                         |                                       |                                  |                                                                            |
| cognitive/mental status                                                                                                                 | 4                       |                                       | _____                            |                                                                            |
| vital signs                                                                                                                             | 4                       |                                       | _____                            |                                                                            |
| skin and vascular integrity                                                                                                             | 4                       |                                       | _____                            |                                                                            |
| wound status                                                                                                                            | 4                       |                                       | _____                            |                                                                            |
| endurance                                                                                                                               | 4                       |                                       | _____                            |                                                                            |

|                                                                                                                      |   |  |  |
|----------------------------------------------------------------------------------------------------------------------|---|--|--|
| segmental length, girth<br>and volume                                                                                | 4 |  |  |
| sensation                                                                                                            | 4 |  |  |
| strength                                                                                                             | 4 |  |  |
| tone                                                                                                                 | 4 |  |  |
| reflexes                                                                                                             | 4 |  |  |
| movement patterns                                                                                                    | 4 |  |  |
| coordination                                                                                                         | 4 |  |  |
| balance                                                                                                              | 4 |  |  |
| developmental stage                                                                                                  | 4 |  |  |
| soft tissue                                                                                                          | 4 |  |  |
| joint motion/play                                                                                                    | 4 |  |  |
| pain                                                                                                                 | 4 |  |  |
| cranial and peripheral<br>nerve function                                                                             | 4 |  |  |
| posture                                                                                                              | 4 |  |  |
| gait                                                                                                                 | 4 |  |  |
| functional abilities                                                                                                 | 4 |  |  |
| assistive device fit/use                                                                                             | 4 |  |  |
| pulmonary system                                                                                                     | 4 |  |  |
| 3. Determine the physical<br>therapy needs of any<br>patient with perceived<br>or potential movement<br>dysfunction. | 4 |  |  |
| 4. Develop and document a<br>plan of care for a<br>patient with movement<br>dysfunction.                             | 4 |  |  |

|    |                                                                                                                                          |   |  |       |
|----|------------------------------------------------------------------------------------------------------------------------------------------|---|--|-------|
| 5. | Recognize the psychosocial impact of dysfunction and disability and integrate the needs of the patient and family into the plan of care. | 4 |  | _____ |
| 6. | Perform treatment procedures in a manner that is appropriate to the patient's status and desired goals.                                  | 4 |  | _____ |
|    | These may include:                                                                                                                       |   |  |       |
|    | techniques of the neurosensory approaches                                                                                                | 4 |  | _____ |
|    | developmental activities                                                                                                                 | 4 |  | _____ |
|    | balance training                                                                                                                         | 4 |  | _____ |
|    | coordination training                                                                                                                    | 4 |  | _____ |
|    | positioning techniques                                                                                                                   | 4 |  | _____ |
|    | exercise techniques                                                                                                                      | 4 |  | _____ |
|    | soft tissue mobilization                                                                                                                 | 4 |  | _____ |
|    | joint mobilization                                                                                                                       | 4 |  | _____ |
|    | activities of daily living training and functional activities                                                                            | 4 |  | _____ |
|    | tilt table                                                                                                                               | 4 |  | _____ |
|    | transfers                                                                                                                                | 4 |  | _____ |
|    | bed mobility                                                                                                                             | 4 |  | _____ |
|    | wheelchair prescription and mobility                                                                                                     | 4 |  | _____ |
|    | gait training                                                                                                                            | 4 |  | _____ |
|    | prosthetic/orthotic training                                                                                                             | 4 |  | _____ |
|    | recommendations for architectural adjustments                                                                                            | 4 |  | _____ |

|                                                                                                                                                 |   |       |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---|-------|
| thermal agents                                                                                                                                  | 4 | _____ |
| hydrotherapy                                                                                                                                    | 4 | _____ |
| electrotherapy                                                                                                                                  | 4 | _____ |
| massage                                                                                                                                         | 4 | _____ |
| taping and wrapping techniques                                                                                                                  | 3 | _____ |
| postural correction                                                                                                                             | 4 | _____ |
| traction                                                                                                                                        | 3 | _____ |
| wound care                                                                                                                                      | 4 | _____ |
| postural drainage                                                                                                                               | 4 | _____ |
| relaxation techniques                                                                                                                           | 4 | _____ |
| cardiopulmonary rehabilitation                                                                                                                  | 4 | _____ |
| CPR                                                                                                                                             | 4 | _____ |
| 7. Demonstrate ability to apply universal precautions.                                                                                          | 4 | _____ |
| 8. Demonstrate management skills including planning, organizing, supervising, delegating, and working as a member of a multi-disciplinary team. | 4 | _____ |
| 9. Practice in a safe, ethical, and legal manner.                                                                                               | 4 | _____ |
| 10. Participate in the process of scientific inquiry.                                                                                           | 3 | _____ |
| 11. Apply teaching/learning theories and methods in health care and community environments.                                                     | 4 | _____ |
| 12. Demonstrate responsibility for lifelong professional growth and development.                                                                | 4 | _____ |
| 13. Develop and apply programs of prevention and health promotion.                                                                              | 4 | _____ |

Additional Comments:

Return the survey to Debbie Ingram, UTC Physical Therapy  
Dept., 615 McCallie Ave., Chattanooga, TN 37403

APPENDIX G  
ROUND 3 FOLLOW-UP LETTER

September 9, 1994

Dear Program Director,

Thank you for participating in Rounds 1 and 2 of the Delphi survey pertaining to the essential functions required of physical therapy students. I mailed the final third round of the survey to you in August, but I have not received your response. If you have not mailed it yet, please return it to me by September 20. I was very fortunate that all persons participating in Round 1 also participated in Round 2. I am optimistic that this can occur in Round 3 also. I believe this is a worthwhile project for our profession and I hope you will continue to participate.

If for some reason you have misplaced your copy of the survey, please call me at 615-755-4767 and I will send you another copy. If you prefer to FAX a response, I can accept them at 615-755-4132. Thank you for your assistance.

Sincerely,

Debbie Ingram, M.Ed., P.T.

APPENDIX H  
LETTER OF APPRECIATION TO PARTICIPANTS

October 15, 1994

Dear Program Director:

Thank you very much for your participation in the Delphi study of the Essential Functions Required of Physical Therapy Students. As promised, I am enclosing a copy of the results of the study. I hope the results will serve as a reference to you as your program develops or revises your list of essential functions required for your students. It was not my intent to define a list that all programs must copy.

I will be presenting this topic at the Combined Sections Meeting in Reno and I hope to meet many of you there. If I can answer any questions, please feel free to contact me at 615-755-4767.

Sincerely,

Debbie Ingram, M.Ed., P.T.  
Academic Coordinator of Clinical Education

APPENDIX I  
GEOGRAPHICAL DISTRIBUTION OF RESPONSES

Geographical Distribution of Responses to Delphi Survey on  
Essential Functions Required of Physical Therapy Students

| State         | Number of Programs<br>in Population | Number<br>Responding | Percent |
|---------------|-------------------------------------|----------------------|---------|
| Alabama       | 2                                   | 0                    | 0       |
| Arizona       | 1                                   | 0                    | 0       |
| Arkansas      | 1                                   | 0                    | 0       |
| California    | 10                                  | 5                    | 50      |
| Colorado      | 1                                   | 0                    | 0       |
| Connecticut   | 2                                   | 1                    | 50      |
| Delaware      | 1                                   | 1                    | 100     |
| DC            | 1                                   | 0                    | 0       |
| Florida       | 4                                   | 3                    | 75      |
| Georgia       | 3                                   | 0                    | 0       |
| Idaho         | 1                                   | 0                    | 0       |
| Illinois      | 4                                   | 1                    | 75      |
| Indiana       | 3                                   | 2                    | 67      |
| Iowa          | 2                                   | 2                    | 100     |
| Kansas        | 2                                   | 2                    | 100     |
| Kentucky      | 2                                   | 2                    | 100     |
| Louisiana     | 1                                   | 1                    | 100     |
| Maine         | 1                                   | 1                    | 100     |
| Maryland      | 2                                   | 1                    | 50      |
| Massachusetts | 5                                   | 2                    | 40      |
| Michigan      | 5                                   | 0                    | 0       |
| Minnesota     | 3                                   | 1                    | 33      |

## Geographical Distribution (continued)

|                |     |    |     |
|----------------|-----|----|-----|
| Mississippi    | 1   | 0  | 0   |
| Missouri       | 6   | 4  | 67  |
| Montana        | 1   | 0  | 0   |
| Nebraska       | 1   | 1  | 100 |
| New Jersey     | 3   | 1  | 33  |
| New Mexico     | 1   | 0  | 0   |
| New York       | 13  | 7  | 54  |
| North Carolina | 3   | 2  | 67  |
| North Dakota   | 1   | 1  | 100 |
| Ohio           | 4   | 1  | 25  |
| Oklahoma       | 2   | 1  | 50  |
| Oregon         | 1   | 0  | 0   |
| Pennsylvania   | 10  | 5  | 50  |
| Rhode Island   | 1   | 0  | 0   |
| South Carolina | 1   | 0  | 0   |
| South Dakota   | 1   | 0  | 0   |
| Tennessee      | 3   | 2  | 67  |
| Texas          | 7   | 4  | 57  |
| Utah           | 1   | 0  | 0   |
| Vermont        | 1   | 0  | 0   |
| Virginia       | 3   | 0  | 0   |
| Washington     | 3   | 1  | 33  |
| West Virginia  | 1   | 0  | 0   |
| Wisconsin      | 3   | 3  | 100 |
| Total          | 129 | 58 | 45  |

---

APPENDIX J  
COMMENTS FROM QUESTIONNAIRE 1

**Essential Functions Required of Physical Therapy Students**  
**Comments from Questionnaire #1**

- 1) Utilize appropriate verbal, non-verbal, and written communication with personnel, patients, and families.

**Comments:**

- 023 regardless of language spoken by patient and/or family  
032 distinguish between peers and other "external customers"  
036 Does this include health professionals outside of PT?  
047 Perhaps should include peers, faculty, and other health care providers. One could perform one type of communication and not the other-does this suggest two different items?  
060 Does personnel imply just those with whom you work directly, or include other health care?  
064 Appropriate to say verbal or non verbal? Communicate with reimbursement agencies, vendors, etc.  
076 Plan and present an educational unit on a clinical topic.  
127 modify these modes of communication in accord with changes in the listeners knowledge and understanding. Informed consent implied here.  
010 First must create an environment conducive to community  
031 include various PTs and non-PTs  
080 especially in a multicultural environment  
129 deal effectively with cultural/ethnic diversity; listening, reading  
017 include other health professionals  
099 Does "reasonable accommodation" include directing ancillary caregivers to do what the PT is unable to do?  
112 "personnel" is vague, subdivide

- 2) Safely, reliably and efficiently perform and record the results of physical therapy procedures used to assess the function of the movement system, including assessment of:

- cognitive/mental status
  - vital signs
  - skin and vascular integrity
  - wound status
  - goniometry
  - 005 joint motion with goniometer
  - 109 ROM
  - 127 muscle length and joint range of motion
  - girth
  - sensation
  - strength
  - tone
  - 005 definition unclear
  - reflexes
  - movement patterns
  - coordination
  - balance
  - 127 static and functional
  - developmental stage
  - soft tissue
  - 127 pliability, turgor
  - 005 too vague
  - joint motion/play
  - 005 subjective assessment
  - pain
  - cranial nerve integrity
  - 074 should also include peripheral nerve
  - 005 change integrity to function
  - posture
  - 127 dynamic and static; body symmetry
  - gait
  - functional abilities
  - 127 IAOL and BADL
  - orthotic fit/use
  - prosthetic fit/use
  - wheelchair fit/use
  - ambulatory device fit/use
  - 048 Should this be an assistive device?
  - breath sounds
  - breathing patterns
- others: (please add)
- 005 movements specific to disabilities (special tests eg apprehension tests, painful areas, etc) ligament laxity
  - analyze results of assessments to determine appropriate problems treatable by physical therapy
  - 035 endurance

- 056 endurance
- 076 social environment; vocational background
- 092 pulmonary system
- 103 endurance/fitness; flexibility
- 127 home and workplace assessments
- 010 quality of movement; weight bearing status
- 017 include qualitative vs quantitative and understanding assessment information collected by other health professionals

Comments:

- 011 If it is simply a measurement which requires no interpretation (evaluation, assessment) this may be done by a technical level person. If it requires interpretation and modification while being done it is a professional level skill and may not be delegated to a nonprofessional
- 021 If unable to perform because of a documented disability, an equivalent skill may be substituted, such as supervision, instruction, and/or delegation of tasks in the area which the student is unable to perform.
- 032 Perform independently. Visual acuity is required.
- 047 What about selection of appropriate tests? Could one do this safely but not efficiently? Could they be rated differently by people?
- 060 The use of the term physical therapy procedures makes it sound technician-like. Maybe could say "safely, reliably, efficiently assess the function of the movement system, including assessment of".
- 064 Anthropometrics besides girth-eg. length of segments; muscle length,. Does functional ability assessment include standardized assessments? strength-MMT and use of equipment such as myometers and isokinetic machines?
- 074 assessment of patient's wellness
- 127 two separate categories-perform and record- perhaps record goes with communication. Does cognitive/mental status really fit with movement systems?
- 010 Movement patterns are a subcategory to quality-also eccentric vs concentric, ability to reverse movement, this area needs more finite detail
- 031 separately perform the task, record the results and communication
- 072 transfers, bed mobility
- 101 I don't believe we have reliable tests for many of the variables listed.
- 034 Accreditation list as a guide?
- 099 architectural barrier assessment, adaptive seating and equipment assessment
- 112 include cardiac rehabilitation factors, wound care, N.C. velocities

- 3) Determine the physical therapy needs of any patient with perceived or potential movement dysfunction.

Comments:

- 005 subheadings: analyze results of assessments; determines problems treatable by PT; determines needs for referrals to other professionals; prioritizes problems treatable by PT; develops short term goals; develops long term goals
- 011 mandates generalist preparation, which is the role of professional education
- 038 I would determine this by doing an assessment which is #2.
- 047 What does student have to do to demonstrate this function?
- 060 Could possibly combine this with #2
- 064 Broad, difficult to define. Include decision making process based on assessment and interpretation of information provided by others.
- 127 Refer clients to others as indicated (your skill not up to the client's needs or another professional is more capable at dealing with this problem).
- 007 Does this mean the same as "perform a differential diagnosis"?
- 010 change perceived to actual
- 031 determine goals

- 4) Develop a plan of care for a patient with a movement system dysfunction.

Comments:

- 005 subheadings: design plan to meet priority needs and goals, appropriately sequences treatments
- 021 change "movement system dysfunction" to "physical therapy needs"
- 036 What is the definition of a movement system? Does this include all systems of the body?
- 047 Does plan have to be safe, efficient? Does development have to be done efficiently? Does one have to choose priorities?
- 048 Delete system-rather "impact on movement capabilities". Also needs to mirror #3 so you encompass preventative programs such as industrial medicine, etc.
- 060 What about outcome-plan of care for a patient with a movement system dysfunction to achieve optimal functional outcome.
- 063 revise, discontinue
- 074 Should include: write or dictate; communicate plan with patient and family members
- 127 which utilizes current and contemporary methods of equipment; variables include third party limitations and client's stated goals
- 010 Need to include "appropriately adapt the plan of care to the patient's response to treatment, to changes in status, etc.
- 059 analyze patient data to develop plan
- 017 include measurable goals in plan of care

- 5) Perform treatment procedures in a manner that is appropriate to the patient's status and desired goals. These may include:
  - techniques of the neurosensory approaches
- 127 motor/learning principles
  - developmental activities
  - balance training
  - coordination training
  - positioning techniques
  - exercise techniques
- 007 with and without equipment
  - soft tissue mobilization
  - joint mobilization
  - activities of daily living training and functional activities
  - tilt table
  - transfers
- 112 balance
  - bed mobility
  - wheelchair prescription and mobility
  - gait training
  - prosthetic/orthotic training
  - recommendations for architectural adjustments
- 048 add adaptive equipment-work station design, modified switches, and control of environment
  - manual therapy
  - thermal agents
  - hydrotherapy
  - electrotherapy
  - massage
  - taping and wrapping techniques
  - postural correction
- 112 poor term
  - traction
  - wound care
- 041 including debridement
  - postural drainage
  - manual pulmonary drainage techniques
- 036 not sure what you mean by this; maybe percussion?
  - relaxation exercises
  - cardiopulmonary rehabilitation
  - CPR
- 109 Does this fit here?
  - others: (please add)
- 060 isokinetics, perceptual-motor
- 074 instruct about donning/removing an orthotic or prosthetic device
- 127 relaxation/stress reduction
- 088 first aid
- 059 intermittent compression; biofeedback; recognize inappropriate responses to the procedures
- 123 therapeutic exercise techniques; prosthetic fit evaluation

## Comments:

- 023 Be able to appropriately direct the application or performance of treatment procedures listed.
- 064 strength training with equipment, weights operate treadmill or other exercise equipment
- 111 exercise techniques are too vague; strengthening and flexibility
- 113 The "may" is crucial since the handicapped PT may not be able to do all.
- 127 include safety concepts performed in a manner which is safe and efficient for therapist and client as noted in #2
- 007 childbirth-pre/post natal exercises
- 010 First, the treatment procedures need to appropriate (selection to patient's status/goals. Then they must be performed competently.
- 022 Blind will not be able to do wound care if level of unsightedness is high. Should be able to discuss wound care. Will also have problems with U.V. treatments.
- 031 expand on exercise techniques and manual therapy
- 072 isokinetic/isotonic exercises
- 017 safety and ADA issues need to be addressed in greater detail
- 099 casting, seating

6) Demonstrate ability to apply universal precautions.

Comments:

005 How does this differ from safe in 8?

023 (or direct others in use of precautions)

048 to recognize need for and to apply

064 Need to define-protective attire, handling, sterile field  
maintenance, clean-up.

074 and sterile techniques

076 isolation and reverse isolation procedures

113 or know how to instruct other

127 under what circumstances?

112 vague term, provide examples to help interpretation

7) Demonstrate administrative skills including time management and the utilization of supportive personnel.

Comments:

- 039 This one is difficult as decision criterion-not very clear to defend-how impaired?
- 047 How do students demonstrate?
- 048 This should be broader to include management of a PT service, issues of reimbursement, marketing.
- 060 There's probably a lot more than can be added here-specify time management, utilization of support personnel, others as well.
- 064 Do you want to include chart reading, test interpretation, documentation?
- 076 communication and team building with peers in PT and other disciplines
- 092 add conflict resolution
- 109 also budgeting, staff/program development
- 127 Management principles are the basic skills, administration is a hierarchial position in a traditionally structural organization. 010 flexibility, tolerance for ambiguity, responsibility
- 072 add verbal communication, body language, delegation of tasks to supportive personnel
- 017 leadership, delegation
- 112 include personnel evaluation, health care system i.e. within hospital, budget

8) Practice in a safe, ethical, and legal manner.

Comments:

- 047 This is too broad-What does the student have to do-how would one observe/measure this?
- 064 Emphasize different safety issues? Ability to respond to emergencies with patient and surrounding environment
- 074 including all aspects of documentation
- 113 What is safe?
- 127 as reflected by: contemporary practice methods; APTA or other code of ethics; state statutes
- 112 know what constitutes legal manner

9) Participate in the process of scientific inquiry.

Comments:

- 005 subheadings: critically review clinical literature for evidence of treatment efficacy; critically analyze content of workshops and other continuing education offerings for evidence of treatment efficacy; practice therapy based on scientific information when such information exists; question therapy that has little/no scientific evidence of success
- 037 Program duration frequently hinders this process.
- 039 I don't think this is defensible in selection criterion.
- 047 What does this entail?
- 060 Define more explicitly
- 076 ability to pose basic clinical questions that are "researchable"
- 127 This may be a philosophical recommendation. Some see the MPT as being able to discern valid conclusions from non-valid conclusions of research articles. Others see the MPT as noted in #9-a performer to some degree in the formation of the body of knowledge.
- 010 also contribute to
- 080 include ethical/legal standards
- 110 participate as critical consumer
- 123 demonstrate ability to evaluate scientific literature
- 129 question logically; identify, generate, and evaluate elements of logical argument; recognize and differentiate facts, illusions, assumptions and hidden assumptions; distinguish the relevant from the irrelevant
- 017 Clarify: as consumers of research information seeking information; to assist problem solving and drug planning
- 112 further clarification

## Additional Essential Functions:

- 005 use the BlueMACS
- 032 Demonstrate professionalism through participation in education programs, scientific inquiry, appropriate referral and effective and efficient utilization of insurance and reimbursement benefits.
- 035 All of the previous functions appear to focus on the assessment/treatment of sick/disabled persons. Proactive approach to health care may also consider "health promotion." Some of its previously identified functions would overlap but the focus would be different.
- 038 If we're concerned about cognition (critical thinking, problem solving abilities) at the entry level, I might suggest more education, synthesis, and analysis functions. If we're only concerned about "physical" performance, you are probably fine with the functions you have listed.
- 039 Might be good to have a list that is for selection rather than what is professional required only for a safe practice.
- 047 Some of your terms are extremely broad-how would one determine if a student could perform them? You seem to focus on physical performance in that you have tried to be inclusive. There are other "functions" which are cognitive that are not thoroughly addressed. Physical functions are easy to outline/observe/measure. I'm concerned with how one outlines and measures the cognitive skills and judgement that students must have-there should be as much detail for these "functions" as for the physical.
- 048 Incorporate in the functions words to reflect ability to assess/manage/consult on issues with movement across the lifespan so it is clear that pediatrics to geriatrics are the range. Add something on education.
- 056 Screen systems and refer to health care personnel as indicated. Referral would be a priority over screening as it (screening) may be different between programs. Demonstrate cost accountability.
- 066 Demonstrate business skills including preparing a budget, billing for procedures, marketing/public relations, and networking with other health care providers, insurance industry, etc.
- 069 Ability to: assess/screen a client to determine the appropriateness of PT intervention; delegate responsibility to appropriate health professionals; modify Rx plan as needed; consult with appropriate health professionals; educate clients, other health professionals and public.
- 074 Also include: successfully complete clinical education requirements with reasonable accommodation
- 079 Essential functions for all students are those included

- in the Standards for Education Programs. Graduates need to do all of those things. What may need to be modified is the how not the what.
- 109 Also: determines whether PT demonstrates appropriate physiological response to increased workload and takes appropriate measures if PT does not; role and function as a member of a multidisciplinary team; commitment to maintaining competence as a health care professional.
  - 127 The whole psychosocial realm-the affective aspects of being an effective member of a team, etc.
  - 010 the exercise of good judgement in changing circumstances; enable self-responsibility for patients re: goals, compliance, outcomes; the ability to "think on one's feet" and create effective adaptation to plans; ability to generalize from the specific and to appropriately contextualize the specific to generality. The issue of competence must be addressed. Caring, respect and dignity for each person. There is more to practice competence than skill or technical demonstration of ability.
  - 031 education of patients, family, and personnel; prevention-identify risks and develop programs to prevent; health programs.
  - 082 Demonstrate teaching/learning skill including developing a lecture, demonstration testing evaluation
  - 123 develop and apply programs of prevention and health promotion to all populations; evaluate geriatric clients
  - 129 Self assess, self correct, and self direct; identify needs and sources of learning; continually seek new knowledge and understanding; identify sources of and seek our feedback; effectively use and provide feedback for improving personal interaction; recognize and define problems, analyze data, develop solutions, and evaluate outcomes; fulfill commitments and be accountable for actions and outcomes; identify sources of stress and develop effective coping behaviors.
  - 017 functional assessments of environments with regards to safety, accessibility, adaptation to increased function, use of adaptive equipment and mobility aids
  - 034 Quantify lifting requirements, gain information from chart/patient, recognize and respond to threats to patient safety in timely fashion.
  - 112 familiar with health care issues, involvement in state and federal governments

APPENDIX K  
PERCENTAGES OF RESPONSES OF THE RATINGS OF  
ESSENTIAL FUNCTIONS IN ROUND 2

**Percentages of Responses of the Ratings of Essential Functions in Questionnaire 2 (N=58)**

|                                                                                                                                         |  | Scale: 4=Definitely Essential<br>3=Somewhat Essential<br>2=Somewhat Not Essential<br>1=Definitely Not Essential<br>0=No Response |    |   |   |    |
|-----------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------|----|---|---|----|
| Essential Function                                                                                                                      |  | 4                                                                                                                                | 3  | 2 | 1 | NR |
| 1. Utilize appropriate verbal non-verbal, and written communication with patients, families and others.                                 |  | 98                                                                                                                               | 0  | 0 | 0 | 2  |
| 2. Safely, reliably and efficiently perform appropriate physical therapy procedures used to assess the function of the movement system. |  | 90                                                                                                                               | 5  | 0 | 0 | 5  |
| These may include the assessment of:                                                                                                    |  |                                                                                                                                  |    |   |   |    |
| cognitive/mental status                                                                                                                 |  | 76                                                                                                                               | 24 | 0 | 0 | 0  |
| vital signs                                                                                                                             |  | 91                                                                                                                               | 9  | 0 | 0 | 0  |
| skin and vascular integrity                                                                                                             |  | 77                                                                                                                               | 21 | 2 | 0 | 0  |
| wound status                                                                                                                            |  | 72                                                                                                                               | 28 | 0 | 0 | 0  |
| endurance                                                                                                                               |  | 67                                                                                                                               | 14 | 0 | 0 | 19 |
| segmental length, girth and volume                                                                                                      |  | 76                                                                                                                               | 22 | 0 | 0 | 2  |
| sensation                                                                                                                               |  | 88                                                                                                                               | 12 | 0 | 0 | 0  |
| strength                                                                                                                                |  | 93                                                                                                                               | 7  | 0 | 0 | 0  |
| tone                                                                                                                                    |  | 85                                                                                                                               | 10 | 2 | 0 | 3  |
| reflexes                                                                                                                                |  | 77                                                                                                                               | 17 | 4 | 0 | 2  |

|    |                                                                                                                                                         |    |    |   |   |   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|---|---|---|
|    | movement patterns                                                                                                                                       | 82 | 16 | 0 | 0 | 2 |
|    | coordination                                                                                                                                            | 84 | 16 | 0 | 0 | 0 |
|    | balance                                                                                                                                                 | 91 | 9  | 0 | 0 | 0 |
|    | developmental stage                                                                                                                                     | 62 | 34 | 2 | 0 | 2 |
|    | soft tissue                                                                                                                                             | 76 | 17 | 0 | 5 | 2 |
|    | joint motion/play                                                                                                                                       | 86 | 14 | 0 | 0 | 0 |
|    | pain                                                                                                                                                    | 90 | 10 | 0 | 0 | 0 |
|    | cranial and peripheral<br>nerve function                                                                                                                | 79 | 21 | 0 | 0 | 0 |
|    | posture                                                                                                                                                 | 91 | 9  | 0 | 0 | 0 |
|    | gait                                                                                                                                                    | 93 | 7  | 0 | 0 | 0 |
|    | functional abilities                                                                                                                                    | 90 | 10 | 0 | 0 | 0 |
|    | assistive device fit/use                                                                                                                                | 79 | 21 | 0 | 0 | 0 |
|    | pulmonary system                                                                                                                                        | 69 | 29 | 2 | 0 | 0 |
| 3. | Determine the physical<br>therapy needs of any<br>patient with perceived<br>or potential movement<br>dysfunction.                                       | 90 | 7  | 0 | 0 | 3 |
| 4. | Develop and document a<br>plan of care for a<br>patient with movement<br>dysfunction.                                                                   | 97 | 3  | 0 | 0 | 0 |
| 5. | Recognize the psychosocial<br>impact of dysfunction and<br>disability and integrate<br>the needs of the patient<br>and family into the plan<br>of care. | 79 | 21 | 0 | 0 | 0 |
| 6. | Perform treatment procedures<br>in a manner that is<br>appropriate to the<br>patient's status and<br>desired goals.                                     | 86 | 14 | 0 | 0 | 0 |

These may include:

|                                                                     |    |    |    |   |    |
|---------------------------------------------------------------------|----|----|----|---|----|
| techniques of the<br>neurosensory approaches                        | 56 | 41 | 3  | 0 | 0  |
| developmental activities                                            | 59 | 36 | 3  | 0 | 2  |
| balance training                                                    | 81 | 19 | 0  | 0 | 0  |
| coordination training                                               | 74 | 26 | 0  | 0 | 0  |
| positioning techniques                                              | 93 | 5  | 2  | 0 | 0  |
| exercise techniques                                                 | 84 | 16 | 0  | 0 | 0  |
| soft tissue mobilization                                            | 68 | 29 | 3  | 0 | 0  |
| joint mobilization                                                  | 61 | 34 | 2  | 0 | 3  |
| activities of daily living<br>training and functional<br>activities | 73 | 17 | 0  | 0 | 10 |
| tilt table                                                          | 55 | 36 | 9  | 0 | 0  |
| transfers                                                           | 81 | 16 | 3  | 0 | 0  |
| bed mobility                                                        | 78 | 17 | 5  | 0 | 0  |
| wheelchair prescription<br>and mobility                             | 56 | 31 | 3  | 0 | 0  |
| gait training                                                       | 84 | 14 | 2  | 0 | 0  |
| prosthetic/orthotic<br>training                                     | 69 | 29 | 2  | 0 | 0  |
| recommendations for<br>architectural adjustments                    | 59 | 34 | 7  | 0 | 0  |
| manual therapy                                                      | 52 | 43 | 5  | 0 | 0  |
| thermal agents                                                      | 64 | 29 | 7  | 0 | 0  |
| hydrotherapy                                                        | 62 | 28 | 10 | 0 | 0  |
| electrotherapy                                                      | 90 | 3  | 7  | 0 | 0  |
| massage                                                             | 49 | 33 | 16 | 2 | 0  |
| taping and wrapping<br>techniques                                   | 30 | 53 | 17 | 0 | 0  |
| postural correction                                                 | 94 | 3  | 3  | 0 | 0  |

|     |                                                                                                                                                             |     |    |    |   |   |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|---|---|
|     | traction                                                                                                                                                    | 57  | 33 | 10 | 0 | 0 |
|     | wound care                                                                                                                                                  | 67  | 24 | 9  | 0 | 0 |
|     | postural drainage                                                                                                                                           | 52  | 38 | 5  | 3 | 2 |
|     | relaxation techniques                                                                                                                                       | 52  | 41 | 7  | 0 | 0 |
|     | cardiopulmonary<br>rehabilitation                                                                                                                           | 63  | 34 | 3  | 0 | 0 |
|     | CPR                                                                                                                                                         | 83  | 14 | 3  | 0 | 0 |
| 7.  | Demonstrate ability to apply<br>universal precautions.                                                                                                      | 97  | 3  | 0  | 0 | 0 |
| 8.  | Demonstrate management<br>skills including planning,<br>organizing, supervising,<br>delegating, and working<br>as a member of a<br>multi-disciplinary team. | 55  | 24 | 19 | 0 | 0 |
| 9.  | Practice in a safe, ethical,<br>and legal manner.                                                                                                           | 100 | 0  | 0  | 0 | 0 |
| 10. | Participate in the process<br>of scientific inquiry.                                                                                                        | 46  | 47 | 0  | 5 | 2 |
| 11. | Apply teaching/learning<br>theories and methods in<br>health care and<br>community environments.                                                            | 64  | 36 | 0  | 0 | 0 |
| 12. | Demonstrate responsibility<br>for lifelong professional<br>growth and development.                                                                          | 84  | 14 | 2  | 0 | 0 |
| 13. | Develop and apply programs<br>of prevention and health<br>promotion.                                                                                        | 70  | 28 | 2  | 0 | 0 |

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APPENDIX L

COMPARISON OF MEDIAN RATINGS OF ESSENTIAL FUNCTIONS

### Comparison of Median Ratings of Essential Functions in Rounds 2 and 3

|                                                                                                                                         | Scale: | 4=Definitely Essential<br>3=Somewhat Essential<br>2=Somewhat Not Essential<br>1=Definitely Not Essential |                   |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------|-------------------|
| Essential Function                                                                                                                      |        | Round 2<br>(N=58)                                                                                        | Round 3<br>(N=52) |
| 1. Utilize appropriate verbal non-verbal, and written communication with patients, families and others.                                 |        | 4                                                                                                        | 4                 |
| 2. Safely, reliably and efficiently perform appropriate physical therapy procedures used to assess the function of the movement system. |        | 4                                                                                                        | 4                 |
| These may include the assessment of:                                                                                                    |        |                                                                                                          |                   |
| cognitive/mental status                                                                                                                 |        | 4                                                                                                        | 4                 |
| vital signs                                                                                                                             |        | 4                                                                                                        | 4                 |
| skin and vascular integrity                                                                                                             |        | 4                                                                                                        | 4                 |
| wound status                                                                                                                            |        | 4                                                                                                        | 4                 |
| endurance                                                                                                                               |        | 4                                                                                                        | 4                 |
| segmental length, girth and volume                                                                                                      |        | 4                                                                                                        | 4                 |
| sensation                                                                                                                               |        | 4                                                                                                        | 4                 |
| strength                                                                                                                                |        | 4                                                                                                        | 4                 |
| tone                                                                                                                                    |        | 4                                                                                                        | 4                 |
| reflexes                                                                                                                                |        | 4                                                                                                        | 4                 |
| movement patterns                                                                                                                       |        | 4                                                                                                        | 4                 |

|                    |                                                                                                                                                         |   |   |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|                    | coordination                                                                                                                                            | 4 | 4 |
|                    | balance                                                                                                                                                 | 4 | 4 |
|                    | developmental stage                                                                                                                                     | 4 | 4 |
|                    | soft tissue                                                                                                                                             | 4 | 4 |
|                    | joint motion/play                                                                                                                                       | 4 | 4 |
|                    | pain                                                                                                                                                    | 4 | 4 |
|                    | cranial and peripheral<br>nerve function                                                                                                                | 4 | 4 |
|                    | posture                                                                                                                                                 | 4 | 4 |
|                    | gait                                                                                                                                                    | 4 | 4 |
|                    | functional abilities                                                                                                                                    | 4 | 4 |
|                    | assistive device fit/use                                                                                                                                | 4 | 4 |
|                    | pulmonary system                                                                                                                                        | 4 | 4 |
| 3.                 | Determine the physical<br>therapy needs of any<br>patient with perceived<br>or potential movement<br>dysfunction.                                       | 4 | 4 |
| 4.                 | Develop and document a<br>plan of care for a<br>patient with movement<br>dysfunction.                                                                   | 4 | 4 |
| 5.                 | Recognize the psychosocial<br>impact of dysfunction and<br>disability and integrate<br>the needs of the patient<br>and family into the plan<br>of care. | 4 | 4 |
| 6.                 | Perform treatment procedures<br>in a manner that is<br>appropriate to the<br>patient's status and<br>desired goals.                                     | 4 | 4 |
| These may include: |                                                                                                                                                         |   |   |
|                    | techniques of the<br>neurosensory approaches                                                                                                            | 4 | 4 |

|                                                                     |   |   |
|---------------------------------------------------------------------|---|---|
| developmental activities                                            | 4 | 4 |
| balance training                                                    | 4 | 4 |
| coordination training                                               | 4 | 4 |
| positioning techniques                                              | 4 | 4 |
| exercise techniques                                                 | 4 | 4 |
| soft tissue mobilization                                            | 4 | 4 |
| joint mobilization                                                  | 4 | 4 |
| activities of daily living<br>training and functional<br>activities | 4 | 4 |
| tilt table                                                          | 4 | 4 |
| transfers                                                           | 4 | 4 |
| bed mobility                                                        | 4 | 4 |
| wheelchair prescription<br>and mobility                             | 4 | 4 |
| gait training                                                       | 4 | 4 |
| prosthetic/orthotic<br>training                                     | 4 | 4 |
| recommendations for<br>architectural adjustments                    | 4 | 4 |
| thermal agents                                                      | 4 | 4 |
| hydrotherapy                                                        | 4 | 4 |
| electrotherapy                                                      | 4 | 4 |
| massage                                                             | 3 | 4 |
| taping and wrapping<br>techniques                                   | 3 | 3 |
| postural correction                                                 | 4 | 4 |
| traction                                                            | 4 | 3 |
| wound care                                                          | 4 | 4 |

|     |                                                                                                                                                             |   |   |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|     | postural drainage                                                                                                                                           | 4 | 4 |
|     | relaxation techniques                                                                                                                                       | 4 | 4 |
|     | cardiopulmonary<br>rehabilitation                                                                                                                           | 4 | 4 |
|     | CPR                                                                                                                                                         | 4 | 4 |
| 7.  | Demonstrate ability to apply<br>universal precautions.                                                                                                      | 4 | 4 |
| 8.  | Demonstrate management<br>skills including planning,<br>organizing, supervising,<br>delegating, and working<br>as a member of a<br>multi-disciplinary team. | 4 | 4 |
| 9.  | Practice in a safe, ethical,<br>and legal manner.                                                                                                           | 4 | 4 |
| 10. | Participate in the process of<br>scientific inquiry.                                                                                                        | 3 | 3 |
| 11. | Apply teaching/learning<br>theories and methods in<br>health care and<br>community environments.                                                            | 4 | 4 |
| 12. | Demonstrate responsibility<br>for lifelong professional<br>growth and development.                                                                          | 4 | 4 |
| 13. | Develop and apply programs<br>of prevention and health<br>promotion.                                                                                        | 4 | 4 |

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APPENDIX M  
COMMENTS FROM QUESTIONNAIRE 2

**Essential Functions Required of Physical Therapy Students**  
**Comments from Questionnaire #2**

- 005 I evaluated "3" when I thought definitely important but student would not have adequate expertise in all patient situations.
- 007 Isn't wheelchair prescription an evaluation/assessment procedure rather than treatment technique? Many techniques could be performed by PTAs.
- 010 A critical function of all PTs is missing-knowing when to refer patients to other disciplines; and knowing when to refer patients to other PTs when the PT is beyond one's expertise or ability-in a timely manner.
- 031 Some of these answers depend on area of PT care you might practice in. There is some flexibility.
- 037 I believe there are differences in what to expect from a new graduate versus a seasonal professional. I expect PTs to do all the above listed but not necessarily as a new graduate.
- 064 We had an interesting retreat on ADA and essential functions this week. We had 24 faculty attend. The bottom line is that all of our goals and objectives (somewhat like you have here) are essential for all students. The key is whether they can accomplish them with reasonable modifications. The faculty agreed that modifications could include special equipment and/or the use of another individual that the student would have to be able to instruct. Without this discussion, I think many of our faculty would look at the issue narrowly-e.g. the student must be able to physically perform everything. We agreed that is not what we truly believe.
- 086 I have a problem with the word perform in #2 and #6. Therapists do not necessarily need to be able to perform but must be able to teach someone else to adequately perform in a manner that will allow the therapist to assist, evaluate and plan.
- 123 Suggest that the study question include a "point in time" at which the skills are rated-if it is not essential for the student in a first affiliation to use manual therapy but essential for a student completing a program. I couldn't rate any of these choices less than three when I thought of them at entry level. If it was a spread of ratings the author wanted, only case studies, or "ways of establishing priorities" that would spread i.e. the need to address education for prevention might be less a priority with some clients than others depending on the cultural issues involved, etc.
- 127 I am assuming that the student is one who has had all academic and clinical experiences and is ready to graduate.

APPENDIX N  
FREQUENCY DISTRIBUTION OF RATINGS  
IN QUESTIONNAIRE 3

**Frequency Distribution of the Ratings of Essential Functions  
in Questionnaire 3 (N=52)**

|                                                                                                                                         |  | Scale: 4=Definitely Essential<br>3=Somewhat Essential<br>2=Somewhat Not Essential<br>1=Definitely Not Essential<br>0=No Response |    |   |   |    |
|-----------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------|----|---|---|----|
| Essential<br>Function                                                                                                                   |  | 4                                                                                                                                | 3  | 2 | 1 | NR |
| 1. Utilize appropriate verbal non-verbal, and written communication with patients, families and others.                                 |  | 100                                                                                                                              | 0  | 0 | 0 | 0  |
| 2. Safely, reliably and efficiently perform appropriate physical therapy procedures used to assess the function of the movement system. |  | 92                                                                                                                               | 8  | 0 | 0 | 0  |
| These may include the assessment of:                                                                                                    |  |                                                                                                                                  |    |   |   |    |
| cognitive/mental status                                                                                                                 |  | 85                                                                                                                               | 15 | 0 | 0 | 0  |
| vital signs                                                                                                                             |  | 94                                                                                                                               | 6  | 0 | 0 | 0  |
| skin and vascular integrity                                                                                                             |  | 88                                                                                                                               | 12 | 0 | 0 | 0  |
| wound status                                                                                                                            |  | 86                                                                                                                               | 12 | 2 | 0 | 0  |
| endurance                                                                                                                               |  | 88                                                                                                                               | 12 | 0 | 0 | 0  |
| segmental length, girth and volume                                                                                                      |  | 79                                                                                                                               | 21 | 0 | 0 | 0  |
| sensation                                                                                                                               |  | 90                                                                                                                               | 10 | 0 | 0 | 0  |
| strength                                                                                                                                |  | 91                                                                                                                               | 9  | 0 | 0 | 0  |
| tone                                                                                                                                    |  | 83                                                                                                                               | 13 | 0 | 4 | 0  |
| reflexes                                                                                                                                |  | 79                                                                                                                               | 21 | 0 | 0 | 0  |

|    |                                                                                                                                                         |    |    |   |   |   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|---|---|---|
|    | movement patterns                                                                                                                                       | 90 | 10 | 0 | 0 | 0 |
|    | coordination                                                                                                                                            | 87 | 13 | 0 | 0 | 0 |
|    | balance                                                                                                                                                 | 90 | 10 | 0 | 0 | 0 |
|    | developmental stage                                                                                                                                     | 79 | 21 | 0 | 0 | 0 |
|    | soft tissue                                                                                                                                             | 83 | 15 | 2 | 0 | 0 |
|    | joint motion/play                                                                                                                                       | 87 | 13 | 0 | 0 | 0 |
|    | pain                                                                                                                                                    | 92 | 8  | 0 | 0 | 0 |
|    | cranial and peripheral<br>nerve function                                                                                                                | 92 | 8  | 0 | 0 | 0 |
|    | posture                                                                                                                                                 | 90 | 10 | 0 | 0 | 0 |
|    | gait                                                                                                                                                    | 92 | 8  | 0 | 0 | 0 |
|    | functional abilities                                                                                                                                    | 94 | 6  | 0 | 0 | 0 |
|    | assistive device fit/use                                                                                                                                | 79 | 21 | 0 | 0 | 0 |
|    | pulmonary system                                                                                                                                        | 71 | 29 | 0 | 0 | 0 |
| 3. | Determine the physical<br>therapy needs of any<br>patient with perceived<br>or potential movement<br>dysfunction.                                       | 98 | 2  | 0 | 0 | 3 |
| 4. | Develop and document a<br>plan of care for a<br>patient with movement<br>dysfunction.                                                                   | 88 | 12 | 0 | 0 | 0 |
| 5. | Recognize the psychosocial<br>impact of dysfunction and<br>disability and integrate<br>the needs of the patient<br>and family into the plan<br>of care. | 88 | 12 | 0 | 0 | 0 |
| 6. | Perform treatment<br>procedures in a manner that<br>is appropriate to the<br>patient's status and<br>desired goals.                                     | 90 | 10 | 0 | 0 | 0 |

These may include:

|                                                                     |    |    |    |   |   |
|---------------------------------------------------------------------|----|----|----|---|---|
| techniques of the<br>neurosensory approaches                        | 71 | 27 | 2  | 0 | 0 |
| developmental activities                                            | 69 | 31 | 0  | 0 | 0 |
| balance training                                                    | 87 | 13 | 0  | 0 | 0 |
| coordination training                                               | 79 | 21 | 0  | 0 | 0 |
| positioning techniques                                              | 83 | 17 | 0  | 0 | 0 |
| exercise techniques                                                 | 87 | 13 | 0  | 0 | 0 |
| soft tissue mobilization                                            | 73 | 25 | 2  | 0 | 0 |
| joint mobilization                                                  | 75 | 23 | 2  | 0 | 0 |
| activities of daily living<br>training and functional<br>activities | 83 | 17 | 0  | 0 | 0 |
| tilt table                                                          | 65 | 31 | 4  | 0 | 0 |
| transfers                                                           | 83 | 13 | 4  | 0 | 0 |
| bed mobility                                                        | 83 | 13 | 4  | 0 | 0 |
| wheelchair prescription<br>and mobility                             | 75 | 23 | 2  | 0 | 0 |
| gait training                                                       | 85 | 13 | 2  | 0 | 0 |
| prosthetic/orthotic<br>training                                     | 79 | 19 | 2  | 0 | 0 |
| recommendations for<br>architectural adjustments                    | 69 | 25 | 4  | 0 | 2 |
| thermal agents                                                      | 71 | 21 | 4  | 0 | 4 |
| hydrotherapy                                                        | 69 | 23 | 8  | 0 | 0 |
| electrotherapy                                                      | 73 | 21 | 6  | 0 | 0 |
| massage                                                             | 61 | 29 | 8  | 2 | 0 |
| taping and wrapping<br>techniques                                   | 33 | 52 | 15 | 0 | 0 |
| postural correction                                                 | 79 | 19 | 2  | 0 | 0 |

|     |                                                                                                                                                             |     |    |   |   |   |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|---|---|---|
|     | traction                                                                                                                                                    | 46  | 46 | 8 | 0 | 0 |
|     | wound care                                                                                                                                                  | 75  | 21 | 4 | 0 | 0 |
|     | postural drainage                                                                                                                                           | 59  | 35 | 6 | 0 | 0 |
|     | relaxation techniques                                                                                                                                       | 61  | 35 | 4 | 0 | 0 |
|     | cardiopulmonary<br>rehabilitation                                                                                                                           | 69  | 27 | 4 | 0 | 0 |
|     | CPR                                                                                                                                                         | 87  | 11 | 2 | 0 | 0 |
| 7.  | Demonstrate ability to<br>apply universal precautions.                                                                                                      | 96  | 4  | 0 | 0 | 0 |
| 8.  | Demonstrate management<br>skills including planning,<br>organizing, supervising,<br>delegating, and working<br>as a member of a<br>multi-disciplinary team. | 81  | 15 | 4 | 0 | 0 |
| 9.  | Practice in a safe, ethical<br>and legal manner.                                                                                                            | 100 | 0  | 0 | 0 | 0 |
| 10. | Participate in the process<br>of scientific inquiry.                                                                                                        | 50  | 42 | 6 | 2 | 0 |
| 11. | Apply teaching/learning<br>theories and methods in<br>health care and<br>community environments.                                                            | 75  | 23 | 0 | 0 | 2 |
| 12. | Demonstrate responsibility<br>for lifelong professional<br>growth and development.                                                                          | 88  | 10 | 2 | 0 | 0 |
| 13. | Develop and apply programs<br>of prevention and health<br>promotion.                                                                                        | 79  | 17 | 2 | 0 | 2 |

---

APPENDIX O  
COMMENTS FROM QUESTIONNAIRE 3

**Essential Functions Required of Physical Therapy Students  
Comments from Questionnaire #3**

- 1 Utilize appropriate verbal, non-verbal, and written communication with patients, families, and others.**

Comments:

- 05 no changes in any ratings -reason? why would you expect me to change based on median?

- 2 Safely, reliably and efficiently perform and record the results of physical therapy procedures used to assess the function of the movement system.**

These may include the assessment of:

cognitive/mental status  
vital signs  
skin and vascular integrity  
wound status  
segmental length, girth and volume  
sensation  
strength  
tone  
reflexes  
movement patterns  
coordination  
balance  
developmental stage  
soft tissue  
joint motion/play  
pain  
cranial and peripheral nerve integrity  
posture  
gait  
functional abilities  
assistive device fit/use  
pulmonary system

Comments:

- 127 recent study has shown this to be unreliable and at least not as important as previously thought-joint motion/play
- 114 don't feel this skill is essential at entry level-endurance, movement patterns, developmental stage, pulmonary system;I failed to realize peripheral nerve function was included-cranial and peripheral nerve function
- 112 Important to understand blood gas for cardiac rehab, most pulmonary being done by respiratory therapist "we gave it away"
- 101 we have no reliable measures for tone, reflexes, and coordination

- 98 address quality of movement- movement patterns  
 97 I believe that in the overall scheme of patient care that  
 this is not as highly essential as the previous listings  
 75 many reflexes are more appropriately measured by  
 physicians  
 63 thought a lead in to following specifics; vitals-can  
 delegate; a blind PT can ask assistance; tone, movement  
 patterns-often this is not a well defined concept, it  
 varies with evaluator; developmental stage- beyond basics  
 could be considered a specialized skill in many settings;  
 pain not well defined but now many tools; cranial less  
 than peripheral; pulmonary- in depth or specialized  
 assessment not necessary in many settings  
 39 easy to make everything 4; soft tissue is somewhat  
 essential; pulmonary is not a universal  
 38 cognitive and effective skills definitely essential but  
 psychomotor somewhat essential; implies knowledge only  
 36 I agree with a 4 for safety and reliability but a student  
 needing accommodations may be safe and reliable and may  
 not be efficient and may never be able to be efficient in  
 certain tasks. I believe that is why I put a 3 under all  
 of these categories under #2 and feel this is appropriate  
 as long as efficiency is a component of this statement 35  
 more qualified persons should assess; length and girth  
 measurements are essential and volume measurements are  
 somewhat essential  
 23 cranial nerve testing is not usually done in general  
 practice; pulmonary- it depends on what you mean here  
 14 not all PT students will have the opportunity to work  
 with PTs with wounds prior to graduation  
 11 this is technical- does not require interpretation. Is  
 not vital sign patient, monitoring info; assistive device  
 fit/use-this can be done by technical level personnel  
 without evaluation/assessment interpretation skills;  
 pulmonary assessment rarely done as standard practice in  
 california- if what you mean is breath sounds, tidal  
 volumes, etc.

**3 Determine the physical therapy needs of any patient with  
 perceived or potential movement dysfunction.**

Comments:

127 think I did not read this clearly the second time

**4 Develop and document a plan of care for a patient with  
 movement system dysfunction.**

No Comments

- 5 Recognize the psychosocial impact of dysfunction and disability and integrate the needs of the patient and family into the plan of care.

Comments:

98 essential for addressing patient placement

- 6 Perform treatment procedures in a manner that is appropriate to the patient's status and desired goals. These may include:

techniques of the neurosensory approaches  
developmental activities  
balance training  
coordination training  
positioning techniques  
exercise techniques  
soft tissue mobilization  
joint mobilization  
activities of daily living training and functional activities  
tilt table  
transfers  
bed mobility  
wheelchair prescription and mobility  
gait training  
prosthetic/orthotic training  
recommendations for architectural adjustments  
thermal agents  
hydrotherapy  
electrotherapy  
massage  
taping and wrapping techniques  
postural correction  
traction  
wound care  
postural drainage  
relaxation exercises  
cardiopulmonary rehabilitation  
CPR

Comments:

- 128 used for sports and for amputees and other patients with edema-taping and wrapping tech.  
114 do not feel this skill is defined as essential at entry level-soft tissue and joint mobs, postural drainage, relaxation techniques, cardiopulmonary rehab; not defined essential at PT level-massage  
112 ?? definition connective tissue massage vs myofascial release-soft tissue mobs; ?? definition of wheelchair prescription-would this include molding?; postural drainage-same as #2 pulmonary  
101 lack of studies of their validity-neurosensory approaches

- and developmental activities
- 98 not in all settings-postural drainage, relaxation techniques, cardiopulmonary rehab
- 97 can be done by technicians-wheelchair prescription and mobility; can be done by other personnel- architectural adj. and recommendations
- 87 not often done by our students on clinicals-postural drainage
- 75 tilt table- not as commonly used as before
- 56 I put three because I am not sure what is meant by neurosensory approaches and developmental techniques. With the changes in movement science I would expect that students need to reach a 4 level of proficiency but not by traditional or facilitation model methods; soft tissue/joint mobs - students need some proficiency but these are skills that develop more with continued education
- 74 other rehab professionals may perform these skills if PT not experienced in this-architectural adj/rec ;traction-must be capable of proper set up; wound care-actual technique can only be taught in a clinic;CPR-not required of all health care professionals,and not required of all PTs to work
- 72 I misinterpreted the original statement, The student with or without reasonable accommodation must be capable of performing all skills required of an entry level PT. Previously I interpreted that they could instruct others ie, PTA, to carry out the skills. However they must posses the basic knowledge and skills themselves first.
- 66 hydrotherapy- does PT really need to do this
- 64 some handling skills are needed, some techniques are useful, entry level students do not need to be able to perform all techniques especially for limited populations; not all mobilization skills are essential for entry level PT; thermal agents, hydro, and electro readily performed by other personnel. believe PTs need knowledge, some skill or application, but all are not necessary; massage-relatively minor component of skilled PT practice other practitioners can perform readily; tapping and wrapping-essential skills in PT acute and rehab practices skills PTs don't all have but need to
- 63 ADLs heading! no;tilt table we can often manage without;wheel chair prescription and mobility- not essential for PT(prescription); recommend architectural adjustments-OT can often assume; Thermal agents, hydro, electro-core of traditional PT; massage-not essential
- 59 soft tissue mob-I must have missed it last time
- 48 traction-must understand and be able to adjust, I.d. problems with etc.
- 47 tilt table- not sure how often this is used any more in the clinical setting;relaxation techniques-I would argue not used in current health care environment

- 42 all therapists should know basic wrapping techniques, ie  
how to apply ace wrap;traction- still consider this  
technique a need to know 41 tapping and wrapping-this is  
an integral part of sports PT;traction- still very  
frequently used modality
- 40 neurosensory approach and developmental activities-  
scientific literature is not available to support; tilt  
table- can be done by PTA alone; tapping/wrapping- not  
major treatment because trainers involved
- 39 positioning techniques-somewhat O.K.;wheelchair  
prescription and mobility-somewhat; architectural  
adj./rec-somewhat at best! They are being to inclusive  
not reality oriented!
- 38 perform to me implies psychomotor and I don't feel that  
is definitely essential; these are PTA skills; this can  
be effectively delegated to PTA; cognitive knowledge  
necessary and psychomotor somewhat essential
- 37 ADLs team with OT would do this
- 36 all of the #3's under statement #6 are due to the fact  
that a PT can delegate and supervise the performance of  
treatment to a PTA, the PT student must be able to  
explain the treatment , (instruct), procedures and monitor  
the PTA's performance. It is not necessary for a PT to  
carry out all of the treatment procedures.
- 35 traction is still being used and if done at all it needs  
to be done correctly
- 34 because all the " treatments" could be delegated to an  
intermediary such as PTA I see these as less essential  
than the evaluation or professional behavior items, if  
however using an intermediary is part of " reasonable  
accommodations" then I suppose I would go back to "4"'s  
on these; hard to make essential because it is not unique  
skill of a PT-CPR, patients safety could be provided by  
having non PT staff members know CPR
- 31 the basic modalities can be applied by aides or  
assistants -PT must know when to use!
- 23 can be delegated to another- know what's right but not  
physically performed
- 21 postural drainage, relaxation techniques, cardiopulmonary  
rehab-I still do not think these are essential -others  
(RT,ex physiology, nursing) are doing
- 14 not all students will have the opportunity to do these  
prior to graduation
- 11 positioning- depends on whether you mean "positioning" or  
RIP's which is out of date anyway; once the exercise  
prescription is developed by the PT the PTA can execute  
as long as PT reassesses on a regular basis; tilt table  
PT can instruct and supervise technical persons to do the  
mechanical portion but must monitor patient and progress
- 07 all marked threes are considered somewhat essential  
because many treatment techniques could be performed more  
often by PTA's or aides than by PT's, therefore, if a PT

student has a handicap and cannot perform these techniques, he/she should be able to explain how the technique is performed to the PTA/aides/pt./family member rather than perform technique.

**7 Demonstrate ability to apply universal precautions.**

Comments:

No Comments

**8 Demonstrate management skills including planning, organizing supervising, delegating, and working as a member of a multi-disciplinary team.**

Comments:

87 not necessarily entry level but necessary after some experience

56 I may be arguing level of proficiency here. Students need to know these skills but may not be able to apply on the management level. Perhaps I am misinterpreting. If you have referred to these as a staff PT then 4 as a manager then 3

47 I don't think all of these are essential for a student  
39 somewhat O.K.

**9 Practice in a safe, ethical, and legal manner.**

Comments:

112 very important for growth of profession

**10 Participate in the process of scientific inquiry.**

Comments:

128 need for MSPT and good advancement of the professional, the word participate can be interpreted many different ways

113 I believe they should participate not just observe

110 our profession must educate our entry level students how to consume and participate in clinical research. We cannot leave research up to "academia" or "researchers"

97 we need to be able to validate our existence

75 students must do this even on a limited scale

69 necessary for reason justification of PT science

64 does not mean 'do' research , essential to critically read and evaluate the literature. Need to know ramifications of reliability/validity of measurement

48 absolutely necessary for our professional future and growth in PT!

38 research is a professional PT skill

35 PT is by nature problem solving, there is a critical need to substantiate with scientific evidence the practice of

- physical therapy, ie need for clinical research. This will not happen unless our entry level programs present a positive attitude- philosophy and adequate experience in research methods - scientific inquiry- process
- 34 given that few PT practitioners are called on to do research I don't think it is a necessary component of entry level education
- 17 I believe this is essential if you consider the process of scientific inquiry broadly
- 23 my strong bias to research
- 11 must at least be able to participate-SI could be pilot study!

**11 Apply teaching/learning theories and methods in health care and community environments.**

No Comments

**12 Demonstrate responsibility for lifelong professional growth and development.**

Comments:

- 39 if they don't we shoot them?-not everyone is going to do it!

**13 Develop and apply programs of prevention and health promotion.**

Comments:

- 101 few opportunities in reality to practice this

**Additional Comments:**

- 129 if we were to show this list to a perspective student, how would they determine, or on what basis would they, no whether or not there would be any reason that they would not be able to carry out any of the essential functions without some direction. How will they know what the physical, mental, social skills are that would make it possible to perform these essential functions?
- 123 if a three means might or might not teach or address the issue, my threes should be fours, if three means should include or will logically include but not to the extent

of the fours then my threes stand as is

- 111 I think your median responses indicate part of our problem- we want to be and do everything! In education that is really tough!!
- 109 Saying that these are all essential functions limits the PT to being a disabled person panel. It does not allow the person with even a mild disability (amputee, MS) to perform manual skills, that would be required
- 63 Had a bit of difficulty 'with and without reasonable accommodation' and consequently struggled with knowledge-delegate as perform independently (eg, a visually handicapped person). Level of skill expected for a task to be completed at an adequate level made me fluctuate. Also, I originally put 3's on areas also performed by others in disciplines such as nursing OT, and RT
- 59 maybe the real question comes in the next study, What are the limits of reasonable accommodation for each of these essential skills?
- 39 some of the folks love taking the easy view- essential-many things are used infrequently!
- 21 I hope when you say "completing, with or without reasonable accommodation" you also mean that a PT who cannot "complete" can supervise/instruct another in completing
- 07 PT students must be able to demonstrate ability to perform all skills that are performed only by the PT in the clinical setting. Skills delegated to PTA's may be less essential for the PT student to demonstrate ability to perform, but student needs to understand how skill is performed
- 05 my ratings which are lower than the median, (4 in all but 3 cases) is based on limited practice in clinical situations. For example, most of our students have no opportunity to treat wounds because of the limited centers which offer such an experience. Even with six weeks experience in one specific setting I do not think students can practice all aspects of a skill. " must be capable of completing" does not imply entry level to me. In addition, I do not know what you mean by with or without accommodation. The only rating I had higher than the median was " participate in the process of scientific inquiry" because this is academic and can be done without clinical practice

APPENDIX P  
COMPARISON OF MEDIAN RESPONSES OF  
BACHELOR'S AND MASTER'S PROGRAMS

**Comparison of Median Responses of Entry-level Bachelor's and Master's Physical Therapy Programs (N=52)**

---

Scale: 4=Definitely Essential  
 3=Somewhat Essential  
 2=Somewhat Not Essential  
 1=Definitely Not Essential

| Essential<br>Function | Bachelor's<br>(n=21) | Master's<br>(n=31) |
|-----------------------|----------------------|--------------------|
|-----------------------|----------------------|--------------------|

---

- |                                                                                                                                         |   |   |
|-----------------------------------------------------------------------------------------------------------------------------------------|---|---|
| 1. Utilize appropriate verbal non-verbal, and written communication with patients, families and others.                                 | 4 | 4 |
| 2. Safely, reliably and efficiently perform appropriate physical therapy procedures used to assess the function of the movement system. | 4 | 4 |

These may include the assessment of:

|                                    |   |   |
|------------------------------------|---|---|
| cognitive/mental status            | 4 | 4 |
| vital signs                        | 4 | 4 |
| skin and vascular integrity        | 4 | 4 |
| wound status                       | 4 | 4 |
| endurance                          | 4 | 4 |
| segmental length, girth and volume | 4 | 4 |
| sensation                          | 4 | 4 |
| strength                           | 4 | 4 |
| tone                               | 4 | 4 |
| reflexes                           | 4 | 4 |

|    |                                                                                                                                                         |   |   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|    | movement patterns                                                                                                                                       | 4 | 4 |
|    | coordination                                                                                                                                            | 4 | 4 |
|    | balance                                                                                                                                                 | 4 | 4 |
|    | developmental stage                                                                                                                                     | 4 | 4 |
|    | soft tissue                                                                                                                                             | 4 | 4 |
|    | joint motion/play                                                                                                                                       | 4 | 4 |
|    | pain                                                                                                                                                    | 4 | 4 |
|    | cranial and peripheral<br>nerve function                                                                                                                | 4 | 4 |
|    | posture                                                                                                                                                 | 4 | 4 |
|    | gait                                                                                                                                                    | 4 | 4 |
|    | functional abilities                                                                                                                                    | 4 | 4 |
|    | assistive device fit/use                                                                                                                                | 4 | 4 |
|    | pulmonary system                                                                                                                                        | 4 | 4 |
| 3. | Determine the physical<br>therapy needs of any<br>patient with perceived<br>or potential movement<br>dysfunction.                                       | 4 | 4 |
| 4. | Develop and document a<br>plan of care for a<br>patient with movement<br>dysfunction.                                                                   | 4 | 4 |
| 5. | Recognize the psychosocial<br>impact of dysfunction and<br>disability and integrate<br>the needs of the patient<br>and family into the plan<br>of care. | 4 | 4 |
| 6. | Perform treatment procedures<br>in a manner that is<br>appropriate to the<br>patient's status and<br>desired goals.<br>These may include:               | 4 | 4 |

|                                                                     |   |   |
|---------------------------------------------------------------------|---|---|
| techniques of the<br>neurosensory approaches                        | 4 | 4 |
| developmental activities                                            | 4 | 4 |
| balance training                                                    | 4 | 4 |
| coordination training                                               | 4 | 4 |
| positioning techniques                                              | 4 | 4 |
| exercise techniques                                                 | 4 | 4 |
| soft tissue mobilization                                            | 4 | 4 |
| joint mobilization                                                  | 4 | 4 |
| activities of daily living<br>training and functional<br>activities | 4 | 4 |
| tilt table                                                          | 4 | 4 |
| transfers                                                           | 4 | 4 |
| bed mobility                                                        | 4 | 4 |
| wheelchair prescription<br>and mobility                             | 4 | 4 |
| gait training                                                       | 4 | 4 |
| prosthetic/orthotic<br>training                                     | 4 | 4 |
| recommendations for<br>architectural adjustments                    | 4 | 4 |
| thermal agents                                                      | 4 | 4 |
| hydrotherapy                                                        | 4 | 4 |
| electrotherapy                                                      | 4 | 4 |
| massage                                                             | 4 | 4 |
| taping and wrapping<br>techniques                                   | 3 | 3 |
| postural correction                                                 | 4 | 4 |
| traction                                                            | 3 | 3 |

|                                                                                                                                                                |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| wound care                                                                                                                                                     | 4 | 4 |
| postural drainage                                                                                                                                              | 4 | 4 |
| relaxation techniques                                                                                                                                          | 4 | 4 |
| cardiopulmonary<br>rehabilitation                                                                                                                              | 4 | 4 |
| CPR                                                                                                                                                            | 4 | 4 |
| 7. Demonstrate ability to<br>apply universal precautions.                                                                                                      | 4 | 4 |
| 8. Demonstrate management<br>skills including planning,<br>organizing, supervising,<br>delegating, and working<br>as a member of a<br>multi-disciplinary team. | 4 | 4 |
| 9. Practice in a safe, ethical<br>and legal manner.                                                                                                            | 4 | 4 |
| 10. Participate in the process<br>of scientific inquiry.                                                                                                       | 3 | 4 |
| 11. Apply teaching/learning<br>theories and methods in<br>health care and<br>community environments.                                                           | 4 | 4 |
| 12. Demonstrate responsibility<br>for lifelong professional<br>growth and development.                                                                         | 4 | 4 |
| 13. Develop and apply programs<br>of prevention and health<br>promotion.                                                                                       | 4 | 4 |

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APPENDIX Q  
COMPARISON OF MEDIAN RESPONSES OF  
PUBLIC AND PRIVATE PROGRAMS

# **Comparison of Median Responses of Public and Private Physical Therapy Programs (N=52)**

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Scale: 4=Definitely Essential  
 3=Somewhat Essential  
 2=Somewhat Not Essential  
 1=Definitely Not Essential

| Essential<br>Function | Public<br>(n=32) | Private<br>(n=20) |
|-----------------------|------------------|-------------------|
|-----------------------|------------------|-------------------|

---

|                                                                                                         |   |   |
|---------------------------------------------------------------------------------------------------------|---|---|
| 1. Utilize appropriate verbal non-verbal, and written communication with patients, families and others. | 4 | 4 |
|---------------------------------------------------------------------------------------------------------|---|---|

|                                                                                                                                         |   |   |
|-----------------------------------------------------------------------------------------------------------------------------------------|---|---|
| 2. Safely, reliably and efficiently perform appropriate physical therapy procedures used to assess the function of the movement system. | 4 | 4 |
|-----------------------------------------------------------------------------------------------------------------------------------------|---|---|

These may include the assessment of:

|                                    |   |   |
|------------------------------------|---|---|
| cognitive/mental status            | 4 | 4 |
| vital signs                        | 4 | 4 |
| skin and vascular integrity        | 4 | 4 |
| wound status                       | 4 | 4 |
| endurance                          | 4 | 4 |
| segmental length, girth and volume | 4 | 4 |
| sensation                          | 4 | 4 |
| strength                           | 4 | 4 |
| tone                               | 4 | 4 |
| reflexes                           | 4 | 4 |

|    |                                                                                                                                                         |   |   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|    | movement patterns                                                                                                                                       | 4 | 4 |
|    | coordination                                                                                                                                            | 4 | 4 |
|    | balance                                                                                                                                                 | 4 | 4 |
|    | developmental stage                                                                                                                                     | 4 | 4 |
|    | soft tissue                                                                                                                                             | 4 | 4 |
|    | joint motion/play                                                                                                                                       | 4 | 4 |
|    | pain                                                                                                                                                    | 4 | 4 |
|    | cranial and peripheral<br>nerve function                                                                                                                | 4 | 4 |
|    | posture                                                                                                                                                 | 4 | 4 |
|    | gait                                                                                                                                                    | 4 | 4 |
|    | functional abilities                                                                                                                                    | 4 | 4 |
|    | assistive device fit/use                                                                                                                                | 4 | 4 |
|    | pulmonary system                                                                                                                                        | 4 | 4 |
| 3. | Determine the physical<br>therapy needs of any<br>patient with perceived<br>or potential movement<br>dysfunction.                                       | 4 | 4 |
| 4. | Develop and document a<br>plan of care for a<br>patient with movement<br>dysfunction.                                                                   | 4 | 4 |
| 5. | Recognize the psychosocial<br>impact of dysfunction and<br>disability and integrate<br>the needs of the patient<br>and family into the plan<br>of care. | 4 | 4 |
| 6. | Perform treatment procedures<br>in a manner that is<br>appropriate to the<br>patient's status and<br>desired goals.<br>These may include:               | 4 | 4 |

|                                                                     |   |   |
|---------------------------------------------------------------------|---|---|
| techniques of the<br>neurosensory approaches                        | 4 | 4 |
| developmental activities                                            | 4 | 4 |
| balance training                                                    | 4 | 4 |
| coordination training                                               | 4 | 4 |
| positioning techniques                                              | 4 | 4 |
| exercise techniques                                                 | 4 | 4 |
| soft tissue mobilization                                            | 4 | 4 |
| joint mobilization                                                  | 4 | 4 |
| activities of daily living<br>training and functional<br>activities | 4 | 4 |
| tilt table                                                          | 4 | 4 |
| transfers                                                           | 4 | 4 |
| bed mobility                                                        | 4 | 4 |
| wheelchair prescription<br>and mobility                             | 4 | 4 |
| gait training                                                       | 4 | 4 |
| prosthetic/orthotic<br>training                                     | 4 | 4 |
| recommendations for<br>architectural adjustments                    | 4 | 4 |
| thermal agents                                                      | 4 | 4 |
| hydrotherapy                                                        | 4 | 4 |
| electrotherapy                                                      | 4 | 4 |
| massage                                                             | 4 | 4 |
| taping and wrapping<br>techniques                                   | 3 | 3 |
| postural correction                                                 | 4 | 4 |
| traction                                                            | 3 | 4 |

|                                                                                                                                                                |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| wound care                                                                                                                                                     | 4 | 4 |
| postural drainage                                                                                                                                              | 4 | 4 |
| relaxation techniques                                                                                                                                          | 4 | 4 |
| cardiopulmonary<br>rehabilitation                                                                                                                              | 4 | 4 |
| CPR                                                                                                                                                            | 4 | 4 |
| 7. Demonstrate ability to<br>apply universal precautions.                                                                                                      | 4 | 4 |
| 8. Demonstrate management<br>skills including planning,<br>organizing, supervising,<br>delegating, and working<br>as a member of a<br>multi-disciplinary team. | 4 | 4 |
| 9. Practice in a safe, ethical<br>and legal manner.                                                                                                            | 4 | 4 |
| 10. Participate in the process<br>of scientific inquiry.                                                                                                       | 4 | 3 |
| 11. Apply teaching/learning<br>theories and methods in<br>health care and<br>community environments.                                                           | 4 | 4 |
| 12. Demonstrate responsibility<br>for lifelong professional<br>growth and development.                                                                         | 4 | 4 |
| 13. Develop and apply programs<br>of prevention and health<br>promotion.                                                                                       | 4 | 4 |

---

APPENDIX R  
COMPARISON OF MEDIAN RESPONSES OF  
SMALL AND LARGE PROGRAMS

# **Comparison of Median Responses of Small and Large Physical Therapy Programs (N=48)**

---

Scale: 4=Definitely Essential  
 3=Somewhat Essential  
 2=Somewhat Not Essential  
 1=Definitely Not Essential

| Essential<br>Function | Small (0-40)<br>(n=23) | Large (>40)<br>(n=25) |
|-----------------------|------------------------|-----------------------|
|-----------------------|------------------------|-----------------------|

---

- |                                                                                                                                         |   |   |
|-----------------------------------------------------------------------------------------------------------------------------------------|---|---|
| 1. Utilize appropriate verbal non-verbal, and written communication with patients, families and others.                                 | 4 | 4 |
| 2. Safely, reliably and efficiently perform appropriate physical therapy procedures used to assess the function of the movement system. | 4 | 4 |

These may include the assessment of:

|                                    |   |   |
|------------------------------------|---|---|
| cognitive/mental status            | 4 | 4 |
| vital signs                        | 4 | 4 |
| skin and vascular integrity        | 4 | 4 |
| wound status                       | 4 | 4 |
| endurance                          | 4 | 4 |
| segmental length, girth and volume | 4 | 4 |
| sensation                          | 4 | 4 |
| strength                           | 4 | 4 |
| tone                               | 4 | 4 |
| reflexes                           | 4 | 4 |

|    |                                                                                                                                                         |   |   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|    | movement patterns                                                                                                                                       | 4 | 4 |
|    | coordination                                                                                                                                            | 4 | 4 |
|    | balance                                                                                                                                                 | 4 | 4 |
|    | developmental stage                                                                                                                                     | 4 | 4 |
|    | soft tissue                                                                                                                                             | 4 | 4 |
|    | joint motion/play                                                                                                                                       | 4 | 4 |
|    | pain                                                                                                                                                    | 4 | 4 |
|    | cranial and peripheral<br>nerve function                                                                                                                | 4 | 4 |
|    | posture                                                                                                                                                 | 4 | 4 |
|    | gait                                                                                                                                                    | 4 | 4 |
|    | functional abilities                                                                                                                                    | 4 | 4 |
|    | assistive device fit/use                                                                                                                                | 4 | 4 |
|    | pulmonary system                                                                                                                                        | 4 | 4 |
| 3. | Determine the physical<br>therapy needs of any<br>patient with perceived<br>or potential movement<br>dysfunction.                                       | 4 | 4 |
| 4. | Develop and document a<br>plan of care for a<br>patient with movement<br>dysfunction.                                                                   | 4 | 4 |
| 5. | Recognize the psychosocial<br>impact of dysfunction and<br>disability and integrate<br>the needs of the patient<br>and family into the plan<br>of care. | 4 | 4 |
| 6. | Perform treatment procedures<br>in a manner that is<br>appropriate to the<br>patient's status and<br>desired goals.<br>These may include:               | 4 | 4 |

|                                                                     |   |   |
|---------------------------------------------------------------------|---|---|
| techniques of the<br>neurosensory approaches                        | 4 | 4 |
| developmental activities                                            | 4 | 4 |
| balance training                                                    | 4 | 4 |
| coordination training                                               | 4 | 4 |
| positioning techniques                                              | 4 | 4 |
| exercise techniques                                                 | 4 | 4 |
| soft tissue mobilization                                            | 4 | 4 |
| joint mobilization                                                  | 4 | 4 |
| activities of daily living<br>training and functional<br>activities | 4 | 4 |
| tilt table                                                          | 4 | 4 |
| transfers                                                           | 4 | 4 |
| bed mobility                                                        | 4 | 4 |
| wheelchair prescription<br>and mobility                             | 4 | 4 |
| gait training                                                       | 4 | 4 |
| prosthetic/orthotic<br>training                                     | 4 | 4 |
| recommendations for<br>architectural adjustments                    | 4 | 4 |
| thermal agents                                                      | 4 | 4 |
| hydrotherapy                                                        | 4 | 4 |
| electrotherapy                                                      | 4 | 4 |
| massage                                                             | 4 | 4 |
| taping and wrapping<br>techniques                                   | 3 | 3 |
| postural correction                                                 | 4 | 4 |
| traction                                                            | 3 | 3 |

|                                                                                                                                                                |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| wound care                                                                                                                                                     | 4 | 4 |
| postural drainage                                                                                                                                              | 4 | 4 |
| relaxation techniques                                                                                                                                          | 4 | 4 |
| cardiopulmonary<br>rehabilitation                                                                                                                              | 4 | 4 |
| CPR                                                                                                                                                            | 4 | 4 |
| 7. Demonstrate ability to apply<br>universal precautions.                                                                                                      | 4 | 4 |
| 8. Demonstrate management<br>skills including planning,<br>organizing, supervising,<br>delegating, and working<br>as a member of a<br>multi-disciplinary team. | 4 | 4 |
| 9. Practice in a safe, ethical<br>and legal manner.                                                                                                            | 4 | 4 |
| 10. Participate in the process<br>of scientific inquiry.                                                                                                       | 4 | 3 |
| 11. Apply teaching/learning<br>theories and methods in<br>health care and<br>community environments.                                                           | 4 | 4 |
| 12. Demonstrate responsibility<br>for lifelong professional<br>growth and development.                                                                         | 4 | 4 |
| 13. Develop and apply programs<br>of prevention and health<br>promotion.                                                                                       | 4 | 4 |

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APPENDIX S  
SAMPLE LIST OF ESSENTIAL FUNCTIONS

WHEELING JESUIT COLLEGE  
PHYSICAL THERAPY DEPARTMENT  
ESSENTIAL FUNCTIONS FOR PHYSICAL THERAPY STUDENTS<sup>1</sup>

Physical therapy students must demonstrate their ability to perform at least the following skills safely, reliably and efficiently during their physical therapy education.

1. Use appropriate oral, written and non-verbal communication with patients, families, other health care workers and members of the lay public.
2. Perform appropriate physical therapy procedures used to assess the function of the movement system. Included are assessment of cognitive/mental status, vital signs, skin and vascular integrity, wound status, endurance, segmental length, girth and volume, sensation, strength, tone, reflexes, movement patterns, coordination, balance, developmental stage, soft tissue, joint motion/play, pain, cranial and peripheral nerve function, posture, gait, functional abilities, assistive device fit/use, and pulmonary system.
3. Determine the physical therapy needs of any patient with perceived or potential movement dysfunction.
4. Develop and document a plan of care for a patient with movement dysfunction.
5. Recognize the psychosocial impact of dysfunction and disability and integrate the needs of the patient and family into the plan of care.
6. Perform treatment procedures in a manner that is appropriate to the patient's status and desired goals. These include techniques of the neurosensory approaches, developmental activities, balance training, coordination training positioning techniques, exercise techniques, soft tissue mobilization, joint mobilization, functional activities of daily living, tilt table, transfers, bed mobility, wheelchair prescription and mobility training, gait training, prosthetic/orthotic training, recommendations for architectural adjustments, thermal agents, hydrotherapy, electrotherapy, massage, taping and wrapping, postural correction, traction, wound care, postural drainage, relaxation techniques, cardiopulmonary rehabilitation and cardiopulmonary resuscitation (one-and two-rescuer techniques for adult, child and infant.)
7. Use universal precautions appropriately.
8. Demonstrate management skills including planning, organizing, supervising, delegating, and working as a member of a multi-disciplinary team.
9. Practice in a safe, ethical, and legal manner.
10. Participate in the process of scientific inquiry.
11. Apply teaching/learning theories and methods in health care and community environments.
12. Demonstrate responsibility for lifelong personal and professional growth and development.
13. Develop and apply programs of prevention and health promotion.

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<sup>1</sup>Adapted with permission from Ingram, Debbie, Essential Functions Required of Physical Therapy Students, work in progress intended for presentation at Combined Sections Meeting in Reno, Nevada, February 1995.

## VITA

Deborah Ann Bryson Ingram was born in Cleveland, Tennessee on April 19, 1956 and graduated from Cleveland High School in 1974. She attended East Tennessee State University and completed a Bachelor of Science degree in Physical Therapy at Georgia State University in 1979. She received a Master of Education with an emphasis in Diagnostic and Prescriptive Special Education from the University of Tennessee at Chattanooga in 1984. She attended the University of Tennessee, Knoxville from Spring of 1991 until December 1994 when she received the degree of Doctor of Education with a major in Leadership Studies in Education.

She is presently employed as the Academic Coordinator of Clinical Education and Assistant Professor of Physical Therapy at the University of Tennessee at Chattanooga. In addition, she is the Chairman of the Board of Occupational and Physical Therapy Examiners for the state of Tennessee, the national Program Chairperson for the Federation of State Boards of Physical Therapy, and a member of the Tennessee Governor's Committee on Employment of Persons with Disabilities.