

The Trend Toward the Clinical Doctorate in Allied Health:  
Implications for Rural Communities

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Implications for Rural Communities**

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## **Executive Summary**

The clinical doctorate is a growing phenomenon in the allied health professions. In some fields, the advanced practice doctorate is available for experienced professionals; in others the entry-level doctorate is offered to or required of individuals who are entering the field. Advocates of the clinical doctorate claim the degree will improve quality and efficiency of care. Others argue that the added time and financial costs are unnecessary and will exacerbate current workforce shortages as students look for less costly career choices.

The effects of the move to the clinical doctorate on the supply and quality of allied health care could be particularly acute in rural communities, which have long struggled with recruitment and retention of health care providers. There is no published research on how growth in the clinical doctorate has affected health care in rural areas. To address this gap, we conducted a qualitative assessment of how the transition to the clinical doctorate in one profession, physical therapy, is affecting the supply and quality of rural physical therapy care.

We interviewed three stakeholder groups: physical therapist education program directors and faculty in charge of clinical education; presidents of state physical therapy associations; and directors of physical therapy or rehabilitation departments at rural hospitals from five states: one state from each of the Midwest, South, and West census regions and two contiguous states from the Northeast census region. Physical therapist education programs in rural locations were given priority in our sample selection. Rural areas were defined as non-metropolitan based on the Office of Management and Budget's Core Based Statistical Area designations.

### ***Impact of Move to Clinical Doctorate on Supply of Rural Physical Therapists***

Overall, we found little evidence that the move to the clinical doctorate has had a significant impact on the supply of physical therapists in rural areas. While a majority of the respondents reported that the supply of physical therapists in rural parts of their state is insufficient, few attributed this directly to the growth of the Doctor of Physical Therapy (DPT). A minority of interviewees did perceive that rural supply problems have been exacerbated by the DPT.

Approximately half of the respondents believed that in the future supply would decrease for one or more of the following reasons: rural areas will not be able to meet salary expectations of DPT graduates, the overall number of graduates from DPT programs will decrease due to increased educational costs, and DPT graduates will be more attracted to urban settings that offer greater clinical and professional diversity. On the other hand, three respondents felt that the growth in the DPT may improve the supply of physical therapists in rural areas, which may be more attractive than some urban settings because they offer greater opportunity for autonomous practice and varied case loads.

Other findings related to the effect of the DPT on supply of rural physical therapy care include:

- Most participants felt that applicants and enrollees to DPT education programs do not differ from Master of Physical Therapy (MPT) applicants and enrollees in ways that could affect their likelihood of practicing in rural settings.

- Generally, rural-related course content expanded slightly in programs that transitioned from the MPT to the DPT degree, but the proportion of clinical education sites that were in rural settings was mostly unchanged. There was some indication that clinical education for rural DPT programs may shift toward urban settings under the DPT.
- Conversion to the DPT does not appear to harm the sustainability of education programs in rural areas. Some programs in both rural and urban areas reported difficulty recruiting and retaining faculty with either clinical or research doctorates.

### ***Impact of Move to Clinical Doctorate on Quality of Rural Physical Therapy***

Overall, the study participants did not perceive significant differences in the quality of care delivered by DPT graduates compared to therapists with less advanced academic degrees. Most respondents who had experience with DPT graduates felt that they have more content knowledge and a better grasp of evidence-based practice, but only two (a faculty member and a state association president) believed that new DPT graduates deliver higher quality care than new MPT graduates. Most interviewees felt that practitioner experience, rather than level of academic training, was the main factor contributing to quality of care.

Several respondents felt that the DPT holds the potential to better prepare graduates for rural practice through a greater emphasis on autonomous practice and additional training time that could be used to provide exposure to rural health care issues and settings. However, the study participants did not provide any strong evidence that this possibility has been realized to date. Most respondents felt that preparation for rural practice does not differ by degree. In fact, two state association respondents reported that neither DPT nor MPT graduates are well-prepared for rural practice because they lack a grasp of all the issues surrounding rural health.

Other findings related to the DPT and quality of care in rural areas include:

- The majority of the DPT education program and state association respondents reported that the quality of applicants and enrollees in physical therapist education programs has improved with the DPT.
- There are indications that practicing rural therapists may be less likely to enroll in transitional DPT programs than their urban counterparts. However, considering that respondents did not associate the DPT with an increase in quality of care, this may not have an effect on the quality of care provided in rural areas relative to urban areas.

### ***Perspective of Rural Employers***

With a few exceptions, the rural hospital respondents held a neutral view of the DPT, regarding it as neither an asset nor a drawback relative to less advanced academic degrees. They generally reported that a therapist's degree is a negligible factor in hiring, saying that social and professional skills are the most important factors when hiring a new therapist. At the same time, rural employers seem to be generally supportive of their therapists who desire to obtain the transitional DPT.

There were no strong indications that the DPT specifically is causing financial difficulties for rural employers. Many respondents felt that salaries are rising across the board without regard to degree because of a national shortage of physical therapists. The rural hospital respondents reported that the DPT salary expectations were not out of line with the rest of the market, and that DPTs and MPTs were receiving the same salaries. Most respondents, however, expressed anxiety that the DPT will drive up physical therapy salary expectations in the future, potentially causing problems for smaller rural employers.

None of the respondents felt that the shift to the DPT had changed the physical therapy skill mix in rural areas thus far. A few of the rural hospital respondents, however, reported that they were relying more heavily on physical therapist assistants and aides because of physical therapist staff vacancies; and some rural employers suspected this may become more widespread in the future if DPT salary expectations do become unaffordable.

There were some indications that opportunities for advanced practice and professional development may be more important to clinical doctorate graduates; for rural employers this represents both a peril and an opportunity. Urban settings are able to offer some opportunities that smaller rural employers may not be able to provide. However, rural settings present unique opportunities for allied health practitioners to have varied caseloads, to serve as important access points to the health care system for their patients, and to practice autonomously. As the workforce is increasingly composed of practitioners with clinical doctorates, rural employers may need to adapt their recruitment strategies to emphasize these aspects of rural practice and to consider retention strategies such as supporting professional development of their staff.

### *Summary*

Overall, we found little evidence that the move to the clinical doctorate has had a significant impact on the supply or quality of physical therapy in rural areas. Our findings do point to opportunities for increased collaboration between rural communities and allied health professions that are implementing or considering transitions to the clinical doctorate. Because converting to the clinical doctorate may affect the number of graduates who enter the health care workforce each year, increased communication between educators and rural employers may help to identify potential problems and address any confusion or misperceptions. Further, increased collaboration between clinical doctorate education programs and rural practice sites could be mutually beneficial. For clinical doctorate education programs aiming to prepare graduates for independent practice, rural settings offer unique training opportunities and the potential for autonomous practice to be realized. From the rural employer perspective, interaction with education programs may help with recruitment, and clinicians can benefit from working with students who are current on the latest advances in the profession.

## Introduction

The clinical or professional doctorate is a growing phenomenon in allied health and other health care professions. Unlike the Doctor of Philosophy (Ph.D.), a degree that focuses on research and theory, the clinical doctorate is geared toward gaining depth and breadth in clinical knowledge and skills. Depending upon the profession, the clinical doctorate may be an advanced practice degree for experienced professionals, or it may be offered to or required of individuals entering the field. In professions that are moving to an entry-level doctorate, transitional doctorate programs are available for existing practitioners who are interested in elevating their entry-level degree.<sup>1,2</sup> Currently, the entry-level clinical doctorate is required for pharmacy practice<sup>3</sup> and certification by the American Board of Audiology<sup>4</sup> and is being promoted as the degree of choice by the American Physical Therapy Association.<sup>5</sup> Entry-level doctorates also are an option in nursing<sup>6</sup> and occupational therapy,<sup>7</sup> and the physician assistant profession is considering a move to this type of degree.<sup>8</sup> Advanced practice doctorates are offered in nursing<sup>6</sup>, physical therapy<sup>9</sup>, occupational therapy<sup>7</sup>, and nutrition<sup>10</sup>; and the field of clinical laboratory science<sup>11</sup> is considering the development of such a degree. In many of these professions, the master's degree was previously considered the terminal clinical degree.

The move to the clinical doctorate in allied health has been a source of debate among clinicians, educators, and others in the health care and health policy arenas. Proponents of the move claim the degree is necessary because of the growing complexity of health care, the explosion of new scientific knowledge, and the increasing sophistication of technology; and that the quality and efficiency of care will improve because of the additional training.<sup>10,12-14</sup> Opponents argue that the added time and financial costs to students are not necessary to provide the needed level of care and will discourage individuals from entering a given profession. This may ultimately lead to a decrease in the supply of practitioners in fields that are already facing shortages.<sup>15,16</sup> Leaders in fields considering the clinical doctorate as an entry-level degree must weigh the potential benefits of the degree against the risks of increasing the academic training required to enter the profession.

The consequences of the move to the clinical doctorate may be particularly acute in rural communities. Rural areas have long faced problems with recruitment and retention of health care providers, including allied health personnel.<sup>17-19</sup> As training requirements for these fields increase, the professional expectations and practice setting preferences of graduates may change in ways that affect their likelihood of practicing in rural areas. Common reasons cited for not practicing in a rural area (e.g., lack of professional and clinical support, difficulty accessing professional development opportunities, feelings of isolation) may be more or less important to graduates with a clinical doctorate relative to graduates with a master's or baccalaureate degree. Considering the additional time and cost of their training, graduates with a clinical doctorate may also have higher salary expectations that cannot be met by rural employers. Rural communities, however, may stand to gain greater benefits from allied health practitioners with doctoral training. A goal of the clinical doctorate is to produce a more independent practitioner, a characteristic that may be especially beneficial when practicing in more isolated rural settings. Whether the increased educational requirements of the clinical doctorate produce graduates who are more independent and deliver higher quality of care is not known. Furthermore, it is

unknown whether the additional training requirements of the clinical doctorate programs align with the health care needs of rural communities.

Despite the growth in clinical doctorates and the potential implications for health care delivery, there is little research on how the transition to the clinical doctorate is affecting the characteristics of the health care workforce or the provision of health care services.<sup>20</sup> Even less attention has been paid to how this transition is affecting rural areas in particular. To investigate this issue, we conducted a qualitative assessment of how the transition to the clinical doctorate in one allied health profession, physical therapy, is affecting rural communities now and how it may affect them in the future. We chose to examine physical therapy because the transition to the Doctor of Physical Therapy (DPT) as the profession's entry-level degree began 15 years ago and is nearly complete, so it is likely that effects of the transition are becoming apparent now. While each health profession is unique, many of our findings on the relationship between training requirements and the supply of providers and the quality of care delivered in rural areas may be relevant for other fields as they also consider or enact increased educational requirements.

In the following sections of this report, we provide background information on the impact of the transition to the DPT as it relates to rural communities and on factors that influence therapists' decisions regarding rural practice location. We then discuss the potential pathways through which the clinical doctorate may impact rural communities and outline our study aims. This is followed by a description of our study methods and results. We conclude with a discussion of the implications of our findings. Information on the evolution of the DPT is presented in Appendix 1 and a detailed review of the literature on the impact of the transition to the DPT in physical therapy is presented in Appendix 2.

## **Background**

Research to date on the impact of the transition to the DPT has primarily been conducted using survey methods to gather data from key stakeholders (i.e., physical therapy educators, students, employers, and clinicians) on their attitudes and thoughts about the DPT. None of the survey respondents in these studies, or others who have commented on the perceived benefits and risks of the DPT, considered the impact of the DPT on rural health. In fact, out of the studies reviewed, only one considered geography in the data analysis. This study of practicing physical therapists' attitudes on the entry-level and transitional DPT degrees found that therapists in rural areas placed less importance on the DPT than therapists in urban areas.<sup>21</sup> Details regarding the methods and findings of the studies we reviewed are presented in Appendix 2, along with a table that summarizes the perceived benefits and risks of moving to the DPT.

To understand how the shift to the clinical doctorate may impact access to physical therapy care in rural areas, we also reviewed the limited literature on the factors that influence therapists' decisions regarding rural practice location. Daniels et al. conducted a survey of 820 graduates from 12 health professions programs in New Mexico, including physical therapy, to identify factors associated with rural recruitment and retention.<sup>22</sup> In multivariate analyses, they found that participating in a rural training program and being a mid-level practitioner (nurse practitioner or physician assistant) were the factors most predictive of taking a first job in a rural location. Other factors associated with taking a first job in a rural location included: financial aid for educational

loans, a desire to return to hometown, and a desire to work in a certain size/type of population. Factors associated with retention (i.e., first job rural and staying in rural location) included desire to return to hometown and desire to work in a certain size/type of population. Of those individuals whose first job was in an urban location, therapists (physical therapists, occupational therapists, and speech-language pathologists) were most likely to move to a rural location for a subsequent job. The researchers also found that older therapists were more likely to take a first job or any job in a rural area.

Studies have also been conducted to determine how student exposure to rural physical therapy practice influences future decisions to work in a rural setting. Rhyne et al. conducted a case-control study to examine the association between an interdisciplinary rural health education program and subsequent practice in rural locations among physical therapists, occupational therapists, and speech-language pathologists in the U.S. Therapists in the rural education program were more likely to practice in rural areas relative to controls.<sup>23</sup> One strength of this study was that the analysis controlled for other factors (e.g., age, importance of loan forgiveness, size of childhood town) that may have influenced the decision to work in a rural location.

In a survey of 12 physical therapy students who participated in a weekend rural health conference and a five week rural health clinical affiliation, LaPorta and colleagues found that students' perceptions of rural practice improved after completing the clinical affiliation.<sup>24</sup> Nine of the students said they would be interested in employment in rural areas and two accepted rural health positions following graduation. The students noted the following aspects of rural practice as attractive: variety of patients and practice settings, positive rapport among other health care providers, greater autonomy in practice, close interaction with community, and slower pace of life. Students who were not interested in rural practice indicated that difficulty with spousal employment was one factor that deterred them.

Finally, Hageman and Fuchs<sup>25</sup> surveyed 181 physical therapy students in 1990 and 1991 to determine their interest in rural health practice, their perceptions about rural health practice, and factors influencing their future practice decisions. Over half of the students indicated a moderate to strong interest in rural practice after graduation. Students from smaller hometowns had more interest in practicing in a rural setting relative to students from larger hometowns. When asked to identify the positive aspects of rural physical therapy practice, common responses included: closer relationships with patients, variety of caseload, more autonomy and better interaction with physicians, and small community lifestyle. When asked about the obstacles of rural physical therapy practice, many respondents voiced concerns about building an adequate patient base. Other concerns included finding the capital to begin a rural practice, uncompetitive salaries, isolation, and difficulty of spouse finding employment.

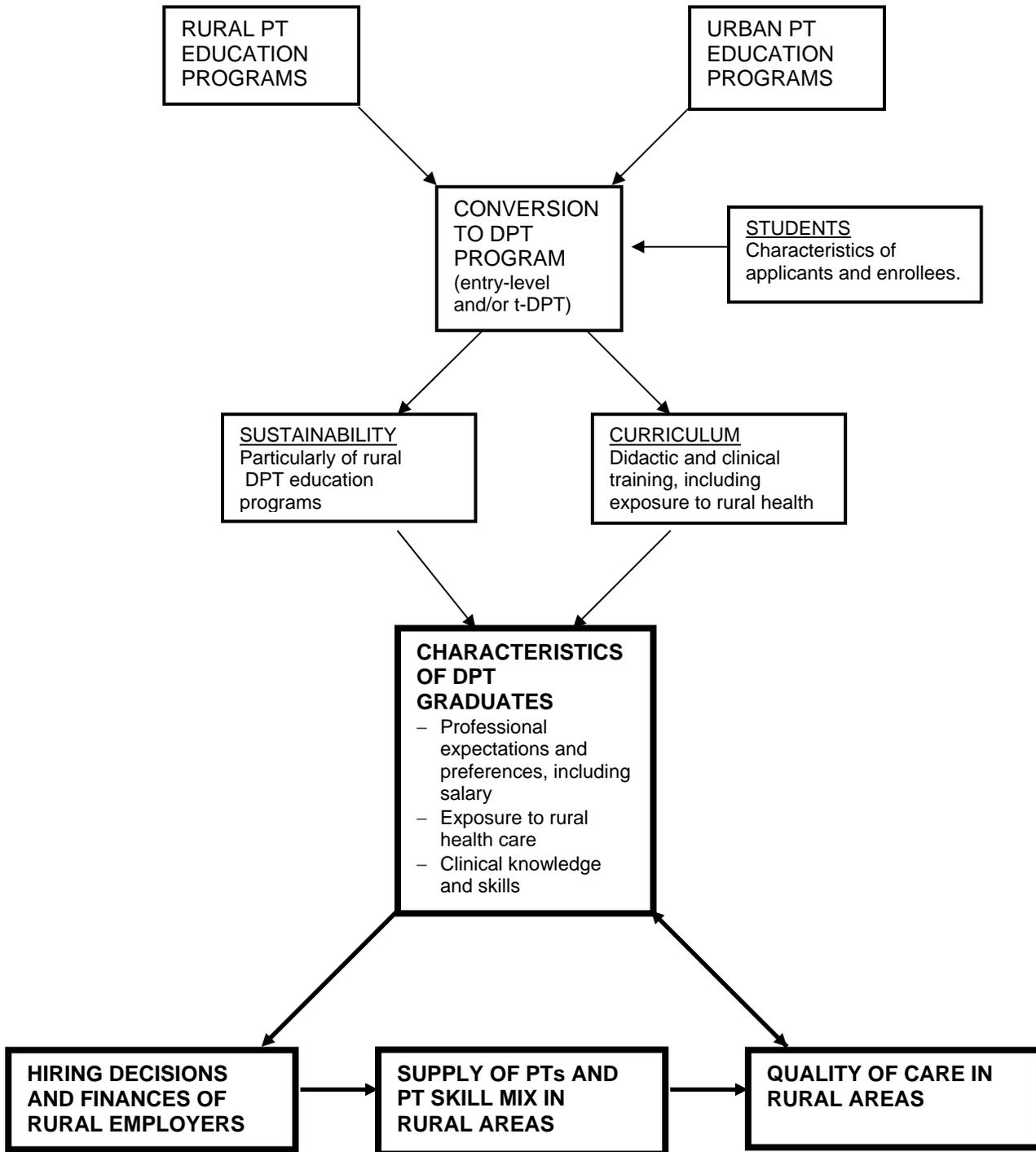
There are also some international studies that have examined factors associated with physical therapist recruitment and retention in rural parts of Canada and Australia.<sup>26-28</sup> In general, the Canadian studies found that lifestyle preferences of therapists and their spouses, perceived career opportunities, proximity of family, and degree of independence and autonomy influenced therapists' decisions to practice in rural areas. Poor management; lack of clinical and professional support; lack of orientation to the rural setting/practice; excessively large caseloads;

excessive travel to clients; and delay in recruitment for vacant positions were reasons physical therapists left positions in rural and remote parts of Australia.<sup>29</sup>

### *Aims of the Study*

The primary objective of our study was to assess the impact of the shift to the clinical doctorate on supply, quality, and recruitment and retention of physical therapists in rural areas. We identified several ways in which the growth in DPT education programs may affect the characteristics of graduates and ultimately the supply of rural physical therapy practitioners and the quality of care they deliver (Figure 1). We conceptualized that the shift to the clinical doctorate may affect the supply and quality of care in rural areas if there are differences between DPT graduates and physical therapy graduates with master's or baccalaureate degrees in terms of professional expectations (including practice setting preferences and salary expectations), exposure to rural settings, and clinical knowledge and skills. The relationship between the preferences and financial circumstances of rural employers and the characteristics of DPT graduates may also lead to impacts on the supply and quality of care in rural areas.

**FIGURE 1. Conceptual Model**



## **Methods**

We conducted semi-structured telephone interviews to collect information on the experiences and perspectives of three respondent groups regarding the transition to the DPT and its effect on supply and quality of care in rural areas. These groups were: physical therapist education program directors and faculty in charge of clinical education; directors of physical therapy or rehabilitation departments at rural hospitals; and presidents of state physical therapy associations.

In this study, we use the Office of Management and Budget's Core Based Statistical Area (CBSA) designations to identify rural areas. Based on the CBSA criteria, a county is designated as part of a metropolitan statistical area if it contains an urbanized area of at least 50,000 people or is economically tied to such an area by commuting patterns. Other counties are designated as micropolitan statistical areas (at least one urbanized area of between 10,000 and 50,000 people) or non-CBSA (no urbanized area of at least 10,000 people). Our analysis defines counties as rural if they are not in a metropolitan statistical area (i.e., they are micropolitan or non-CBSA).

### ***Interview Protocols***

Drawing on existing literature and our conceptual model, we developed three sets of semi-structured interview protocols, one for each respondent group (rural hospitals, state associations, and education programs). All protocols included a set of general questions about the supply of physical therapists in rural areas and how the growth in DPTs has or may affect the supply and quality of physical therapy in rural areas.

The hospital protocol collected information on whether the increase of physical therapists with entry-level or transitional DPTs has affected several issues related to workforce supply and quality of care, including: staff recruitment, retention, and compensation; physical therapy skill mix and division of labor; and physical therapist clinical education affiliations. The state association protocol asked a range questions, including: practicing therapists' attitudes about the entry-level and transitional DPT and whether those attitudes are different among rural physical therapists; reasons physical therapists are/are not obtaining a t-DPT and any differences for rural physical therapists; and differences between the expectations and preferences of MPT and DPT graduates. The education program protocol included items on the program's decision to offer the DPT and whether the characteristics of applicants, students, and graduates differed because of this change. The protocol also included specific questions on the extent to which rural health issues are addressed in the program's mission, the curriculum, and through clinical education and whether any changes were made when converting to the DPT. There were also questions on whether the expectations of DPT graduates (in regard to setting, practice location, and salary) differed from those of MPT graduates. For programs that offered a t-DPT, additional questions on the same topics were included. We created slightly different versions of the education program protocol depending on whether the program had fully transitioned to the DPT, had enrolled students in a DPT curriculum, but had not graduated the first DPT class, or had not yet enrolled any DPT students.

Each of the protocols was pilot tested on the appropriate type of respondent (i.e., physical therapist education program director, faculty member in charge of clinical education, state association president, director of physical therapy or rehabilitation of a rural hospital) in a state not included in our sampling frame. Revisions and modifications were made to the protocols based on the feedback from our pilot participants.

***Interview Sample***

To gather information from across the nation, we conducted interviews with a purposive sample of respondents in five states: one state from each of the Midwest, South, and West census regions and two contiguous states from the Northeast census region. In selecting the study states, we gave priority to states with substantial rural populations and with physical therapist education programs located in rural areas. Because we were interested in factors that caused some physical therapy programs to delay the transition to the DPT, we also considered whether the state had any physical therapy programs that had not yet begun conferring the DPT degree. We obtained information on degrees conferred and program location from the list of physical therapist education programs accredited by the Commission on Accreditation in Physical Therapy Education on the APTA web site.<sup>30</sup> Table 1 summarizes the characteristics of accredited U.S. physical therapist education programs in Table 1. The vast majority of these programs are located in metropolitan areas.

**Table 1: Characteristics of Accredited Physical Therapist Education Programs**

Census Region	Total Programs	County Type*		Highest Degree		Institution Type	
		Non-metro	Metro	DPT	MPT	Public	Private
Midwest	53	5	48	48	5	26	27
Northeast	57	2	55	57	0	16	41
South	62	3	59	52	10	47	15
West	27	0	27	21	6	14	13
Total	199	10	189	178	21	103	96

\* Office of Management and Budget Core Based Statistical Area Designations.

Source: CAPTE Accredited Physical Therapist Education Programs,

[http://www.apta.org/AM/Template.cfm?Section=CAPTE3&Template=/aptaapps/accreditedschools/acc\\_schools\\_map.cfm&process=3&type=PT](http://www.apta.org/AM/Template.cfm?Section=CAPTE3&Template=/aptaapps/accreditedschools/acc_schools_map.cfm&process=3&type=PT) (accessed December 2007).

***Selection of Physical Therapist Education Programs***

We selected two education programs within each state or group of states in the Midwest, Northeast, and South census regions. In the West census region, we selected one education program because there was only one program located in the study state. We prioritized programs located in rural counties (because they are more likely to have experience with issues specific to rural areas) and public institutions (because their missions are more likely to include addressing the supply of health professionals in underserved areas of their states). However, because of the

small number of programs in some states, we also interviewed program directors at some private universities in metropolitan areas.

### *Selection of Rural Hospitals*

We selected three rural hospitals within each state or group of states. To obtain a sample frame for rural hospitals, we used a list of all short term general hospitals located in non-metropolitan counties in the study states from the Online Survey and Certification Reporting System database from the Centers for Medicare and Medicaid Services. This database contains a record for every Medicare-approved provider and is updated quarterly; we used data from the first quarter of 2007. To avoid selecting hospitals located in areas with extreme economic circumstances, we obtained data on the county median income for each hospital from the U.S. Census Bureau.<sup>31</sup> Within each state or group of states, we ranked all non-metropolitan counties by median income and attempted to select hospitals in counties with median incomes between the 25<sup>th</sup> and 75<sup>th</sup> percentiles for each state or group of states. We also consulted state maps and attempted to select hospitals in different geographic regions within each state or group of states. In three cases, education program directors recommended a specific hospital as a potential participant; we also contacted these facilities.

### *Selection of State Association Presidents*

State physical therapy association presidents in each study state were identified through state association web sites.

### ***Interviews***

We initially contacted education program directors and state association presidents via email to request their participation and then followed-up with a phone call. We contacted directors of physical therapy or rehabilitation departments at rural hospitals by telephone. Respondents who agreed to participate were emailed or faxed the interview protocol and the informed consent form in advance of the interviews. Education program directors were invited to include the faculty member in charge of clinical education in the interview since some questions specifically pertained to clinical education.

Prior to the start of the interview, subjects gave verbal consent to participate in the study. Interviews were conducted by two of the authors, with one person conducting the interviews of the physical therapy educators and state association presidents, and the other person conducting the interviews of the hospital directors. At the completion of the interview some general information on the respondent(s) was gathered including: years as a physical therapist, years as a physical therapist in the state, and entry-level physical therapist degree.

Interviews took approximately 30 minutes and were conducted between March and June 2008. The interviewer took notes during the interview; following the interview, the researchers sent the notes back to the respondent to review for accuracy and allow for any additional comments or clarification.

All of the state association presidents and education program chairs we contacted agreed to participate in the survey. We attempted contact with physical therapy/rehabilitation directors at 25 rural hospitals. We spoke directly with 15 directors; 12 agreed to participate in the study and

three declined. At the remaining ten hospitals, we left messages describing our study, but ceased follow-up after identifying three participants in each study state.

### ***Data Analysis***

Descriptive statistics were generated on the characteristics of the respondents, education programs, and hospitals. The interview data were then summarized using a triangulation approach<sup>32</sup> where both interviewers summarized all of the data around the common themes of the conceptual model and interview protocols. The summaries were then compared to assess for degree of agreement and to determine any discrepancies in interpretation. These were then discussed and resolved. This approach of triangulation is particularly useful when the expertise of each of the investigators (i.e., interviewers) is different,<sup>32</sup> as was the case in this study.

## **Results**

### ***Respondents***

We conducted interviews with five state association presidents, 12 physical therapy/rehabilitation directors, and 11 educators from seven physical therapist education programs. Table 2 summarizes the characteristics of the study respondents. The mean years of physical therapist experience of the respondents was high, as was the mean time as a practitioner in the state.

**Table 2. Characteristics of Interviewees (N=28)**

	Interviewees (N)	Highest PT Degree (N)	Mean (SD) Years Experience		
			As a PT	As a PT in Study State	In Current Position*
<b>PT Program Respondents</b>					
Program Directors	7	BS: 1 MS: 3 MA: 1 MPT: 1	27.3 (9.8)	16.6 (11.3)	7.6 (5.1)
Clinical Education Coordinators <sup>†</sup>	4	BS: 1 MS: 1 DPT: 2	28.5 (9.4)	23.0 (3.5)	12.3 (7.3)
<b>State Association Presidents</b>	5	BS: 2 MPT: 1 DPT: 2	19.8 (8.3)	8.5 (4.5)	1.8 (1.0)
<b>Hospital Directors of PT or Rehab<sup>#</sup></b>	12	BS: 4 MPT: 3 MS: 1 t-DPT: 1 N/A: 3	18.1 (12.1)	17.6 (11.9)	10.7 (10.6)

\* For PT program respondents and state association presidents, experience in current position is reported. For hospital respondents, experience in current facility is reported.

<sup>†</sup> Clinical education coordinators were invited to participate in interviews simultaneously with program directors.

<sup>#</sup> Three PT/rehabilitation department directors were not physical therapists: 1 physical therapy assistant, 1 speech language pathologist, 1 exercise physiologist.

Of the seven physical therapist education programs, four were located in non-metropolitan counties, four were at public institutions, and five offered the DPT degree (although one of these programs had not yet graduated any DPT students) (Table 3). Two programs culminated in the MPT.

**Table 3. Characteristics of Physical Therapist Education Programs in Study (N=7)**

	Total (N=7)	Highest Degree Offered	
		DPT (N=5)	MPT (N=2)
<b>County Type*</b>			
Non-metropolitan	5	3	2
Metropolitan	2	2	0
<b>Institution Type</b>			
Public	5	4	1
Private	2	1	1
<b>Education Format<sup>#</sup></b>			
3 + 3	2	1	1
4 + 3	4	4	0
4 + 2	1	0	1
<b>Offer t-DPT</b>			
Yes	3	3	0
No	4	2	2

\* Office of Management and Budget Core Based Statistical Area Designations.

Based on county in which education program is located.

# 3 + 3: 3 years of undergraduate work plus 3 years of physical therapy graduate work

4 + 3: 4 years of undergraduate work plus 3 years of physical therapy graduate work

4 + 2: 4 years of undergraduate work plus 2 years of physical therapy graduate work

The hospitals varied in regard to the size and skill mix of their physical therapy staffs and the economic characteristics of the counties in which they were located (Table 4). Six of the 12 hospitals had one or more therapists with a DPT degree on staff. The number of full time equivalent physical therapists and assistants employed by the hospitals ranged from 2.5 to 16.5 and 0 to 21.5, respectively. Three hospitals did not employ physical therapist assistants and five did not employ physical therapist aides. Eight of the 12 hospitals were fully staffed. Vacancy rates for physical therapists at the hospitals that were not fully staffed ranged from 26 to 33 percent. All 12 hospitals offered inpatient and outpatient physical therapy, and most offered one or more additional services.

**Table 4. Characteristics of Hospitals (N=12)**

Characteristic	Mean (SD) [range] or Frequency
<b>Median County Income</b>	\$36,226 (4,035)
<b>Full Time Equivalent Employees:</b> Physical Therapists Physical Therapist Assistants Physical Therapist Aides	6.3 (4.2) [2.5 – 16.5] 4.0 (5.9) [0 – 21.5] 1.0 (1.1) [0 – 3]
<b>Has One or More DPTs on Staff</b>	6
<b>Physical Therapy Services Provided:</b> Inpatient Outpatient Home Health Skilled Nursing Facility School	12 12 6 7 6
<b>Hospital is Fully Staffed</b>	8
<b>Vacancy Rates<sup>a</sup> (N=4)</b>	PTs [26-36%] PTAs <sup>b</sup> [14-100%] Aides <sup>c</sup> [33%]

<sup>a</sup> defined as (vacant FTEs)/(vacant + non-vacant FTEs) X 100

<sup>b</sup> only 2 facilities had PTA vacancies

<sup>c</sup> only 1 facility had a PT aide vacancy

### ***The Effect of the DPT on Rural Physical Therapy Supply***

While a majority of the respondents reported that the supply of physical therapists in rural parts of their state is insufficient, few attributed this directly to the growth of the DPT. Rather, several respondents noted that physical therapist supply at the national level is low and that it is difficult for rural employers to compete with the higher salaries and lifestyle amenities in more urban settings, a trend that seems to hold true regardless of the level of the PT degree.

Most of the DPT program chairs and state association presidents did not believe that DPT graduates differ from graduates with less-advanced degrees in terms of their desire to work in rural areas. All of the DPT program chairs and most of the state association presidents felt the proportion of physical therapy graduates who are working in rural areas has not changed with the conversion to the DPT.<sup>1, 2</sup> They noted that graduates' choices to work in rural areas were due to factors such as family or growing up in a rural area, rather than features of the DPT.

<sup>1</sup> Education programs in rural areas generally reported higher percentages of their graduates working in rural areas relative to programs in urban areas.

<sup>2</sup> All of the program chairs and most of the state association presidents also noted that practice setting (e.g., outpatient, inpatient, nursing home) preferences of DPT and MPT graduates were similar. One program chair and two state association presidents noted that relative to MPTs, DPTs are more likely to go into their own practice or an administrative position at earlier stages in their careers.

Further, we found no indication that obtaining a t-DPT prompts experienced therapists to leave rural practice. None of the program chairs or state association presidents felt that getting the t-DPT was a trigger for a therapist to change jobs. Two rural hospital respondents had therapists who had obtained a t-DPT while working at their facility; both remained at the facility upon completion of the degree.

A minority of interviewees, however, did perceive that rural supply problems have been exacerbated by the DPT. Two respondents, a faculty member and a state association president, felt that DPT graduates are more likely than MPT graduates to take jobs in metropolitan areas (that generally have higher pay) because they have incurred more debt. Three of the rural hospital respondents felt the growth in the DPT had made it more difficult to recruit physical therapists and believed this was due to a decrease in the number of new physical therapy graduates per year. They believed that physical therapist education programs had decreased their class sizes when they shifted to the DPT and also that spots in DPT education programs were unfilled because students are reluctant to enter the field due to the increased costs of the education. One program chair did note that when their program transitioned to the DPT there was one year in which they produced no physical therapy graduates. As noted by the respondent, such a situation could be particularly detrimental if the education program served as a feeder to rural areas of the state. Other DPT program chairs, however, reported that their class size did not decrease with the transition to the DPT and that they graduated physical therapy students each year during the transition. Two of the program chairs noted that retention of DPT students was slightly higher than that of MPT students resulting in a slightly higher number of DPT graduates.

#### *Future Supply of Rural Physical Therapists*

While many of the study participants reported limited first-hand experience with the DPT or noted the lack of data on the effects of the transition to the DPT, they identified several ways in which rural supply could be affected as the number of entry-level and practicing therapists with DPT degrees grows.

Approximately half of the respondents felt that the shift to the DPT may have a negative impact on supply in the future, citing three reasons: DPT students will incur high levels of education-related debt and will seek jobs in urban areas that pay better; the number of applicants to DPT programs will decrease due to high educational costs; and, compared to MPTs, DPTs will be more attracted to metropolitan practice settings that offer greater access to diverse clinical and professional development opportunities. One rural hospital respondent noted that compared to therapists in the past, recent DPT graduates who have interviewed for jobs at his facility ask many more questions about the availability of professional development activities.

On the other hand, three respondents felt that the growth in the DPT may improve the supply of physical therapists in rural areas.<sup>3</sup> Two rural hospital respondents mentioned that if the DPT contributes to achieving direct access, rural settings may be more attractive to physical therapists than some urban settings because they offer greater opportunity for autonomous practice and varied case loads. One faculty respondent noted that DPT education programs that increase

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<sup>3</sup> A few of the respondents also stated that if physical therapists are added to the Federal Loan Repayment legislation it would have a positive impact on the supply in rural areas. However, they did not think the DPT would affect the likelihood of this happening.

student exposure to physical therapy care in rural areas may actually have a positive impact on supply in these areas.

### *DPT Applicants and Enrollees*

The study participants gave no strong indications that DPT applicants and enrollees differ from MPT applicants and enrollees in ways that could affect their likelihood of practicing in rural settings. All faculty respondents reported that the share of entry-level applicants and enrollees who are from rural areas has remained constant as the DPT has proliferated.<sup>4</sup>

A few respondents had concerns that the shift to the DPT could result in a decrease in physical therapy students with roots in rural areas. In particular, the program chair at one rural MPT program felt that their pool of rural students might decrease with the conversion to the DPT. Historically this program has enrolled a fair number of in-state, rural students, but in an effort to increase diversity in the DPT program, they may attempt to enroll more out-of-state and urban students. In addition, a few respondents from rural hospitals expressed concerns that the increased time and financial costs of the DPT would dissuade local students from pursuing physical therapy as a career.

### *DPT Curriculum*

The effect of the transition to the DPT on the extent to which students are exposed to rural health issues and settings varied across the education programs in our study. All of the program chairs indicated that rural health issues are addressed through coursework and/or clinical education rotations; education programs in rural areas tended to have a greater emphasis in this area. The DPT program chairs generally indicated that rural-related course content expanded slightly after transitioning from the MPT to the DPT degree; and two of the three education programs that had not yet graduated DPT students reported that rural-related course content would expand slightly.

Most of the DPT program chairs (four of five) reported that the proportion of clinical education sites that are in rural settings had not changed in response to the DPT conversion.<sup>5</sup> Three program chairs did note, however, that more rural sites were asking to establish clinical affiliations because of the demand for physical therapists in rural areas.

There was some indication that clinical education for rural DPT programs may shift toward urban settings under the DPT. One rural DPT program chair stated that, compared to their MPT program, they now use a lower proportion of rural clinical education sites so DPT students have more opportunities to affiliate with urban sites where they can gain more exposure to new technology and a variety of diagnoses. Another rural DPT program chair indicated that students do most of their part-time clinical education rotations in rural locations near the school and most of their full-time rotations at urban sites where they can have a greater variety of experiences.

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<sup>4</sup> While none of the programs had a specific mission to enroll students from rural areas, 5 of the 7 programs indirectly promoted enrollment of rural students because their mission was to enroll students from the state or from areas surrounding the school.

<sup>5</sup> The percentage of full-time clinical education sites that were rural varied across physical therapist education programs from 10-60% with programs in rural areas having a greater percentage of rural sites. Two programs (1 MPT and 1 DPT) required specific clinical education experiences in rural areas.

From the rural hospital perspective, with a few exceptions, respondents did not perceive that the growth of DPT programs has had any effect on their clinical education activities. All of the rural hospitals in the study affiliated with at least one physical therapist education program. Some hospitals reported that they have decreased or stopped taking students because of understaffing and a lack of time. One hospital respondent noted that the number of students coming to the facility had decreased in response to the growth in DPT programs, attributing this to the decrease in graduates from DPT programs. Another hospital respondent, however, noticed an increase in requests for clinical education sites in response to the growth in DPTs, attributing this to increased competition for slots due to the increased clinical education requirements for a DPT. Additionally, one physical therapy/rehabilitation director indicated that his hospital is beginning an orthopedic residency program for one DPT graduate per year, and they hope this will help with recruitment of therapists.

### *Sustainability of Rural Physical Therapist Education Programs*

All DPT program chairs, including those in rural areas, indicated that their conversion to the DPT enhanced their sustainability. In fact, increased sustainability was a major motivation for undertaking the transition. When asked why their program converted to the DPT, all five program chairs indicated that doing so was necessary to stay competitive given that the profession was moving to the entry-level doctorate. The program chairs at the two rural DPT education programs did not feel that their transition to the DPT was any more or less difficult than it would have been for a program located in an urban area.<sup>6</sup> The two program chairs at institutions still offering the MPT indicated that factors other than their rural status (i.e., state politics, bureaucracy of the institution) were responsible for their delayed conversion to the DPT.

Responses were mixed with regard to one potential challenge for DPT programs, recruiting and retaining faculty with either clinical or research doctorates. Two program chairs, including one at a rural program, reported that their abilities to recruit faculty improved after they began offering the DPT. Three program chairs, however, noted some increased burden associated with the need to recruit faculty with doctoral degrees for their DPT programs, including one respondent at a rural DPT program who reported difficulty attracting PhD faculty because the school was not affiliated with a major medical center.<sup>7</sup>

### ***The Effect of the DPT on the Quality of Physical Therapy Care in Rural Areas***

Overall, the study participants did not perceive significant differences in the quality of care delivered by DPT graduates compared to therapists with less advanced academic degrees. While most of the respondents noted that new DPT graduates tend to have more content knowledge and a better grasp of evidence-based practice, only two respondents (a faculty member and a state association president) believed that new DPT graduates deliver higher quality care than new MPT graduates. Most interviewees felt that practitioner experience, rather than level of

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<sup>6</sup> One program chair did note some difficulty getting clinical affiliations, but felt this was related more to the fact that their program was newer and not well established relative to other programs in the state and surrounding areas.

<sup>7</sup> Another respondent from a DPT program located in a small city in a mostly rural region of the state felt that the program's location made it difficult to recruit faculty, but indicated that this had been a problem prior to their transition to the DPT.

academic training, was the main factor contributing to quality of care.<sup>8</sup> Several faculty respondents stated that the quality of care delivered by DPT graduates *should* be better than that delivered by MPT graduates because of expanded content (including attention to differential diagnosis, pharmacology, and imaging), increased clinical training, and an emphasis on autonomous practice. However, none of these faculty respondents had received any specific feedback from clinicians in the field to indicate that quality of care differs based on therapists' academic degrees.

### Quality of Care in Rural Settings

Several respondents felt that the DPT holds the potential to better prepare graduates for rural practice. All of the faculty respondents noted that DPT programs train therapists to be independent practitioners in any setting, which should translate into better preparation for practice in rural settings where physical therapists are more likely to be solo practitioners. Four of the five state association presidents also believed that the shift to the DPT could improve the quality of care in rural areas in the future because of the emphasis on autonomous and evidence-based practice. They also noted that the additional year of training in a DPT program gives students more opportunity to be exposed to rural health issues, either through clinical affiliations or service learning opportunities with faculty working in rural areas.

A few faculty members and one rural hospital respondent also noted that the growth in the DPT could lead to an expanded role for physical therapists in rural communities especially if direct access to care is achieved. Physical therapists could serve as a point of access to the health care system and provide more prevention, wellness, and early detection services. If DPTs were to play such a role, it could improve access to health care in rural areas with shortages of primary care providers. In particular, one respondent noted that DPTs could be an asset in the emergency room, where they could help triage patients.

Despite the potential of the DPT to enhance the quality of rural physical therapy care, the study participants did not provide any strong evidence that this possibility has been realized to date. None of the state association presidents felt that preparation for rural practice differs by degree. In fact, two state association respondents reported that neither DPT nor MPT graduates are well-prepared for rural practice because they lack a grasp of all the issues surrounding rural health. One respondent in particular noted that new graduates need to think more about the entire patient, since many individuals in rural areas have limited exposure to health care providers. This respondent also noted that new graduates need to establish a better connection with their rural clients so these individuals know who to come to for future physical therapy-related problems.

### DPT Applicants and Enrollees

While some respondents did not perceive any differences in the quality of applicants and enrollees during the transition to the DPT, the majority of the DPT education program chairs and state association presidents reported that the quality has improved with the DPT. For example, one program chair felt that DPT applicants generally have more volunteer experience, are more

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<sup>8</sup> Two faculty respondents noted that quality of care would improve if the length of clinical training increased substantially with the shift to the DPT. Both also noted, however, that most programs have not increased clinic time substantially with the shift to the DPT.

mature, and are better communicators compared to MPT applicants in the past. Some of the state association presidents noted that DPT students tend to be more mature and more certain of physical therapy as a career relative to MPT students.

Both of the respondents from MPT programs that had not yet converted to the DPT reported that there has been no change in the quality of their applicants and enrollees as DPT programs have proliferated. One program chair felt they had a niche for attracting older, second career students who are strong academically and perceive that they can compete for the same jobs and salaries as DPT graduates while obtaining an MPT degree in a shorter time frame.

Both DPT and MPT program chairs noted that the number of applications and quality of applicants overall had generally been increasing over the past 5 years, following a decrease in the number and quality of applicants in the late 1990's-early 2000's in response to the Balanced Budget Act of 1997. This trend makes it difficult to understand whether changes in applicant and enrollee qualifications are attributable to the DPT specifically or are the result of larger market factors.

#### *Rural Therapists and the t-DPT*

There are indications that rural therapists may be less likely to enroll in these programs than their urban counterparts. All of the state association presidents believed that rural therapists in their state were less likely to obtain a t-DPT for one or more of the following reasons: travel burden if the program requires time on-site; lack of Internet access; insufficient incentive considering the high demand for physical therapists in rural areas; lack of knowledge about t-DPT programs, partly due to less word-of-mouth communication with other physical therapy colleagues; and lack of time or energy due to being overworked.

At the same time, however, all presidents generally thought that the motivations for pursuing a t-DPT were the same for rural and urban therapists. These motivations included the desire to do things such as: increase knowledge, develop professionally, improve public perception, remain competitive, and follow APTA's 2020 vision. Two presidents noted that urban physical therapists may have more incentive to get a t-DPT because they are more likely to work in a direct access situation and are more likely to serve more complex patients than their rural counterparts. On the other hand, another state association president noted that rural therapists may be more likely to get a t-DPT to remain connected to the profession and maintain collegiality, especially if they practice in more isolated parts of the state.

#### *The DPT and Rural Employers*

With a few exceptions, the rural hospital respondents held a neutral view of the DPT, regarding it as neither an asset nor a drawback relative to less advanced academic degrees. The physical therapy/rehabilitation directors generally reported that a therapist's academic degree is a negligible factor in hiring, reporting that social and professional skills are the most important factors when hiring a new therapist. Some of the rural hospital respondents noted that new DPT graduates are slightly more professional and autonomous and have better background knowledge than new MPT graduates. Also, two rural hospital respondents viewed having a DPT on staff as a marketing asset that could set them apart from other area facilities. However, when asked

whether they would prefer to hire a DPT graduate over an MPT graduate with the same amount of experience, only one of the 12 physical therapy/rehabilitation directors stated that they necessarily would prefer the DPT graduate.

At the same time, rural employers seem to be generally supportive of their therapists who desire to obtain the t-DPT. Eleven of the 12 physical therapy/rehabilitation directors indicated that their facility offered or would offer tuition support for a therapist to obtain a t-DPT. Almost half (5) of the facilities had an employee who had either gotten or was working on a t-DPT. Four of these five facilities indicated that the employee either had received or would receive a salary increase or bonus at the completion of the degree. Furthermore, faculty respondents at two of the three education programs that offered the t-DPT degree reported that employers in rural areas of their state were more likely to pay for their staff to get the t-DPT than urban employers.

### DPT Salary Expectations

The study participants did not give any strong indications that DPTs are commanding higher salaries than other therapists thus far. Many respondents felt that, because of a national shortage of physical therapists, salaries are rising across the board without regard to level of degree. The rural hospital respondents who had experience interviewing or hiring DPTs reported that the DPT salary expectations were not out of line with the rest of the market. The state association presidents perceived that new graduates get the same salary, regardless of degree, and several respondents noted that salaries generally are based on experience and possibly specialty certification.<sup>9</sup> Only one employer reported paying DPTs more than MPTs; three employers stated they would consider paying a DPT more than an MPT if the need arose in the future. And, hospitals reported that they offer the same recruitment packages (e.g., loan repayment, sign-on bonuses, and tuition support) to new hires regardless of degree.

Most respondents, however, expressed anxiety that the DPT will drive up physical therapy salary expectations in the future, potentially causing problems for smaller rural employers. Most faculty and state association presidents believed that DPT students desire or expect to earn higher salaries than MPTs (even though, as described above, they were not aware of specific instances in which this has occurred to date). Two respondents mentioned that DPT salaries may accelerate more quickly than MPT salaries, noting that this phenomenon occurred with the transition from the baccalaureate degree to the MPT in physical therapy.<sup>10</sup> Further, several employers were concerned about meeting the salary expectations of DPTs in the future, noting that physical therapy reimbursement rates are the same regardless of the therapist's degree so DPTs would not bring in any additional revenue.

### Physical Therapy Skill Mix

None of the respondents felt that the shift to the DPT had changed the physical therapy skill mix in rural areas thus far.<sup>11</sup> A few of the physical therapy/rehabilitation directors, however, reported

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<sup>9</sup> A faculty respondent in one state indicated that DPTs working in the school system do get paid more than MPTs with similar levels of experience noting that school systems base salaries on amount of education.

<sup>10</sup> One faculty and two rural hospital respondents also commented on the compression of salaries in general—since new graduates, regardless of degree, are commanding high starting salaries, the difference between the salaries of new graduates and experienced therapists is getting smaller.

<sup>11</sup> Several respondents noted that the use of assistants and aides is dictated more by state practice acts and reimbursement policies.

that they were relying more heavily on physical therapist assistants and aides because of physical therapist staff vacancies; and some rural employers suspected this may become more widespread in the future if DPT salary expectations do become unaffordable. Conversely, two respondents felt that the shift to the DPT could decrease the use of support personnel because of the ethical training that DPTs receive (this respondent believed that assistants and aides are often used inappropriately) and the widening gap between education levels for DPTs and physical therapist assistants which may make DPTs less comfortable delegating responsibilities.

## **Discussion and Implications**

The purpose of our study was to better understand the implications of the shift toward the clinical doctorate for rural areas, including its potential to benefit rural communities or exacerbate existing health care workforce shortages. In our examination of the transition to the DPT in physical therapy, we found little evidence that the move to the clinical doctorate has had a significant impact on the supply or quality of physical therapy in rural areas. While most of the study participants noted current problems with the supply of physical therapists in rural parts of their state, few attributed this directly to the growth of the DPT. Likewise, few respondents believed that the shift to the DPT had definitively improved the quality of physical therapy care in rural areas, or in general, noting that experience was the main factor contributing to quality of care. Several of the respondents, however, noted that their experience with the DPT and/or data on the effects of the DPT were limited.

Several of our findings related to the potential reasons why growth in the DPT may affect rural physical therapy supply are consistent with our respondents' general perceptions on the supply and quality of rural physical therapy. Study participants, for example, gave no strong indications that DPT applicants and enrollees differ from MPT applicants and enrollees in ways that could affect their likelihood of practicing in rural settings. In addition, we found no evidence to suggest that obtaining a t-DPT prompts experienced physical therapists to leave rural practice. Faculty respondents also indicated that the rural components of their DPT curriculums, both didactic and clinical, were not much different than their MPT curriculums. Finally, none of the respondents believed that the shift to the DPT had changed the physical therapy skill mix in rural hospitals.

Many respondents believed that the shift to the DPT could impact the supply and quality of rural physical therapy in the future as therapists with DPTs proliferate in the workforce. Approximately half of the respondents believed supply would decrease for one or more of the following reasons: rural areas will not be able to meet salary expectations of DPT graduates, the overall number of graduates from DPT programs will decrease due to increased educational costs, and DPT graduates will be more attracted to urban settings that offer greater clinical and professional diversity. Many respondents also believed that quality of care would improve noting that DPT curriculums emphasize autonomous, evidence-based practice. Respondents also commented on how the additional educational time gives students more opportunity to be exposed to rural health issues, either in the classroom or through clinical training.

### ***Rural Employers***

Our respondents indicated that while some rural employers are having difficulty recruiting physical therapists, this is due to an overall workforce shortage rather than an inability to meet the salary expectations of therapists with DPT degrees. Indeed, some rural employers are offering very competitive start-up salaries and loan repayment packages regardless of degree. Furthermore, therapists with DPT degrees appear to be earning starting salaries that are similar to those for other therapists with the same level of experience. As several respondents noted, reimbursement rates dictate a physical therapist's salary and there is no difference in this rate based on the therapist's entry-level degree. While it is possible that DPT salary expectations will outpace the rural market in the future, reimbursement policies may ultimately dictate physical therapist salaries in both urban and rural settings.

The discrepancy between the perceptions of educators and rural employers regarding impacts of the DPT on the number of graduates per year suggests that better communication between these stakeholder groups about changes in the profession and the potential impacts on employers may be useful. While rural hospital respondents voiced concerns about the DPT leading to declines in the number of new physical therapy graduates who will join the workforce each year, the program chairs we spoke with did not indicate that this has happened. They reported that their applicant pools had grown and improved in quality over the past five years. With a few exceptions, their class sizes had remained the same with conversion from MPT to DPT, and two program chairs noted that retention of DPT students was better than among MPT students. It is possible that the trend among the education programs in our study is different than the trend among all education programs across the country. National data on how the transition to the DPT has affected the annual number of physical therapy graduates could identify any declines and help address the concerns of employers.

Even temporary declines in the number of new graduates entering the workforce could cause problems for rural employers. At two of the DPT programs in our study, a one-year dip in graduates occurred when the program converted from a two year MPT curriculum to a three year DPT curriculum. It may be worthwhile for health professions education programs undergoing transitions to the clinical doctorate in the future to minimize the impact of the transition on their production of graduates and to communicate any short- or long-term changes to rural employers who rely on their graduates.

### ***Rural Education Programs***

We found no evidence to suggest that rural physical therapist education programs had more difficulty transitioning to the DPT degree than urban programs. Furthermore, we found no evidence to suggest that such a conversion made sustainability more difficult. On the contrary, the rural DPT program chairs we interviewed indicated that the conversion had enhanced their sustainability, primarily because the profession as a whole was moving to the entry-level doctorate. Because schools with physical therapist education programs often have other allied health programs, these findings may be relevant to other rural allied health education programs considering the transition to a clinical doctorate.

Both of the program chairs from rural physical therapist education programs still offering the MPT indicated that the quality of their applicants and enrollees had not changed in response to the growth of DPT programs. The majority of DPT education program chairs and state association presidents, however, indicated that the quality of DPT program applicants and enrollees was higher than that of MPT applicants and enrollees, noting better social skills, more maturity, better communication skills, and more certainty about their career choice. Respondents also indicated, however, that these student differences did not translate to differences in quality of physical therapy care delivered by new graduates.

One potential challenge for the rural DPT programs, and for other rural allied health programs, is the recruitment and retention of faculty with doctoral degrees. One of the rural DPT program chairs in our study indicated that it was difficult to recruit PhD faculty since the program was not affiliated with a major medical center. Another DPT program chair noted that their location, in a mostly rural region of the state, made it difficult to recruit faculty. Rural allied health programs considering the conversion to a clinical doctorate may want to consider strategies for attracting qualified faculty to their programs.

### ***Highlighting Unique Opportunities in Rural Practice***

There are some indications that opportunities for advanced practice and professional development may be more important to DPT graduates than other therapists in the past; for rural employers this represents both a peril and an opportunity. On one hand, urban settings are able to offer some amenities—including access to medical technology, interaction with large numbers of colleagues, and continuing education opportunities—that smaller rural employers may not be able to provide. However, as some respondents pointed out, rural settings provide unique opportunities for therapists to have varied caseloads, to serve as important access points to the health care system for their patients, and to practice autonomously. Two of the respondents actually believed that the growth in DPTs may improve supply of PTs in rural areas for these reasons. As the physical therapy workforce is increasingly composed of practitioners with clinical doctorates, rural employers may need to adapt their recruitment strategies to emphasize these aspects of rural practice that appeal to doctoral level therapists.

Rural employers must also consider retention strategies such as supporting professional development of their staff. Almost all of the employers we spoke with were willing to or had supported a therapist interested in obtaining a t-DPT. Our results, however, provide some evidence to suggest that rural physical therapist may be less likely than urban physical therapists to enroll in t-DPT programs. While our results do not provide evidence to suggest that obtaining a t-DPT improves the quality of physical therapy care, for the rural physical therapist such an endeavor may be beneficial for other reasons (e.g., increased collegiality, lessened feelings of isolation, professional development). Some of the reported barriers to rural physical therapists obtaining the t-DPT include travel burden if the program requires time on-site and lack of knowledge about t-DPT programs. These are barriers that could potentially be modified with better communication between rural physical therapists and physical therapist education programs.

There is also opportunity for increased collaboration between clinical doctorate education programs and rural practice sites, a partnership that could be mutually beneficial. For clinical doctorate education programs aiming to prepare graduates for independent practice, rural settings offer unique training opportunities and the potential for autonomous practice to be realized. From the rural employer perspective, interaction with education programs may help with recruitment, and clinicians can benefit from working with students who are current on the latest advances in the profession.

Yet, we found no indication that the shift to the DPT had prompted increased collaboration between educators and rural practice sites. Some DPT program chairs indicated that more rural sites were asking to establish clinical education rotations in hopes of attracting students after graduation, but at all of the education programs in our study the proportion of clinical education that were in rural areas either decreased or did not change in response to conversion to the DPT. This represents an area ripe for further exploration by education programs in physical therapy and other professions as they consider increasing their training goals.

### ***Limitations and Future Research***

Our analysis has some limitations. Because we were interested in factors that caused some physical therapy programs to delay the transition to the DPT, our sample included states with physical therapy programs that had not yet begun conferring the DPT degree. One consequence of this decision was that our study participants may have had less experience with DPT graduates, relative to states where DPT programs have been well established for some time. The perspectives in states with more established DPT programs may be different.

In addition, although our findings suggest that quality of care does not differ between MPT and DPT graduates, our questions regarding the quality of physical therapy care were non-specific. Quality of care is a complex construct that can be defined and measured in variety of ways. Future research examining the impact of the clinical doctorate on rural health should consider ways to operationally define the quality of care. Future analyses also should consider how the clinical doctorate may impact the delivery of care over time. For example, DPT graduates may achieve higher standards of quality more rapidly than graduates with a less advanced academic degree. Finally, future work should further explore how professional skill mix impacts the quality of care in rural areas.

It is important to bear in mind that our study was designed to gain insight on the effects of the clinical doctorate in rural areas based on the perspectives of a small, purposive sample of stakeholders. Our findings, therefore, may not be generalizable to other states, physical therapist education programs, rural hospitals, or allied health professions. As with all interview-based research, the investigators may have introduced bias during the interviews or data analysis. Each of the interviewers conducted their phone surveys independently. To control for bias in interpretation of the data, both interviewers independently reviewed the other's data and came to consensus regarding interpretation.

Despite these potential limitations, by exploring the implications of the transition to the clinical doctorate for rural areas, our study addressed an important knowledge gap. Our findings indicate

that the DPT has not had significant positive or negative effects on rural health care, and point to areas where increased collaboration could benefit educators, practitioners, and rural communities. Our results can guide future research on the topic of the clinical doctorate and rural health. Future studies should follow representative samples of graduates over time to gain a better understanding of the impact of the clinical doctorate on the supply and quality of care in rural areas.

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## Appendix 1

### Evolution of the Doctor of Physical Therapy Degree

Physical therapy has a long history of struggling with the issue of the appropriate education level for entry-level practice. In 1928, the American Physiotherapy Association, the precursor to the American Physical Therapy Association (APTA), established a minimum course of study for schools training physical therapists which included a nine month, 1,200 hour program of instruction for graduates from a recognized school of physical education or nursing.<sup>1,2</sup> Completion of this course of study led to the attainment of a Certificate in Physical Therapy. In 1960, the APTA House of Delegates passed a resolution stating that a bachelor's degree would be the minimum educational requirement for a physical therapist.<sup>1,2</sup> And in 1979, a new resolution was passed stating that, after 1990, the required entry-level education for a physical therapist would be at the post-baccalaureate degree level.<sup>3</sup>

The 1979 resolution was met with conflicting opinions from both the physical therapy and higher education communities,<sup>2,4</sup> many of which mirror the current debate over the clinical doctorate. Proponents of the resolution claimed the educational objectives and professional obligations of physical therapists were too extensive to be realized at the baccalaureate level; the amount of credit hours and intensity of study in the baccalaureate programs were comparable to graduate programs; and the higher degree would increase the credibility and autonomy of physical therapists.<sup>1,2,5,6</sup> Higher education opponents claimed the change reflected degree inflation and there were inadequate numbers of faculty to train the students.<sup>2,4</sup> Those in the profession who opposed the change claimed there was no evidence to suggest that the quality of care differed for new graduates with a baccalaureate versus a master's degree; or that the role of physical therapists in the current health care system would change in response to the higher education.<sup>2</sup> Opponents further argued that higher tuitions would increase the shortage of therapists by deterring individuals, particularly minorities, from entering the field; that varying levels of education in the same workplace could result in strained peer relationships; and that the uncertainty of pending health care reform argued against raising the degree.<sup>1,2</sup>

The 1979 resolution was abandoned in 1988 and was not revived again until 1999 when the APTA House of Delegates passed a resolution requiring that all entry-level programs be at the post-baccalaureate level in order to meet the needs of more comprehensive and complex practice. In January 2002, the Commission on Accreditation in Physical Therapy Education ceased accrediting programs not offering a post-baccalaureate degree.<sup>1</sup>

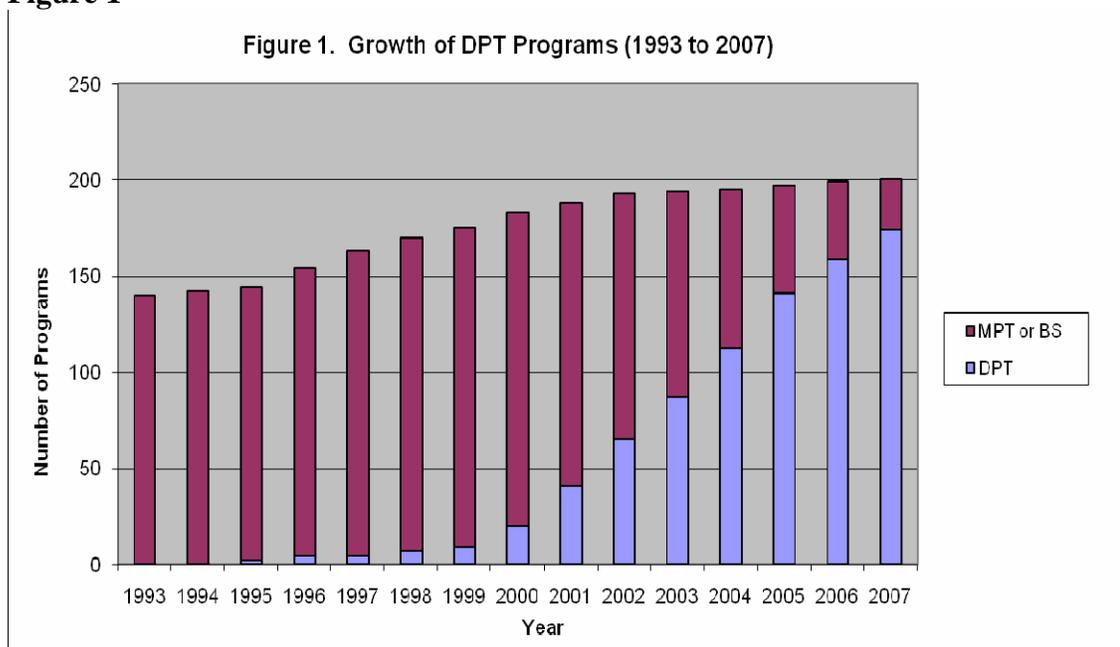
Even before the post-baccalaureate entry-level standards were adopted by the APTA House of Delegates, Creighton University initiated the first entry-level DPT program.<sup>1</sup> The program opened in 1993 and six years later, 9 DPT programs had been accredited and 17 were in the process of converting to the DPT.<sup>1</sup> Data suggest that programs that began the conversion early were more likely to be private, have a larger number of faculty, be more established, and have a higher share of faculty with doctoral degrees.<sup>7,8</sup>

The growth of DPT programs accelerated after the APTA House of Delegates adopted its Vision 2020<sup>9</sup> statement in June of 2000: "By 2020, physical therapy will be provided by physical

therapists who are doctors of physical therapy, recognized by consumers and other health care professionals as the practitioners of choice to whom consumers have direct access for the diagnosis of, interventions for, and prevention of impairments, functional limitations, and disabilities related to movement, function, and health.” A key element of this vision is “direct access”: physical therapists being able to treat patients and receive reimbursement from Medicare and other payers for these services without physician referral.

In the five years following the adoption of Vision 2020, the number of entry-level DPT programs increased rapidly with 20 or more programs being accredited each year (Figure 1). As of June 2008, 91 percent of all accredited physical therapist education programs offer an entry-level DPT degree.<sup>10</sup> Many programs also offer transitional DPT (t-DPT) degrees for clinicians in the field with Master’s of Physical Therapy (MPT) or baccalaureate degrees.

**Figure 1**

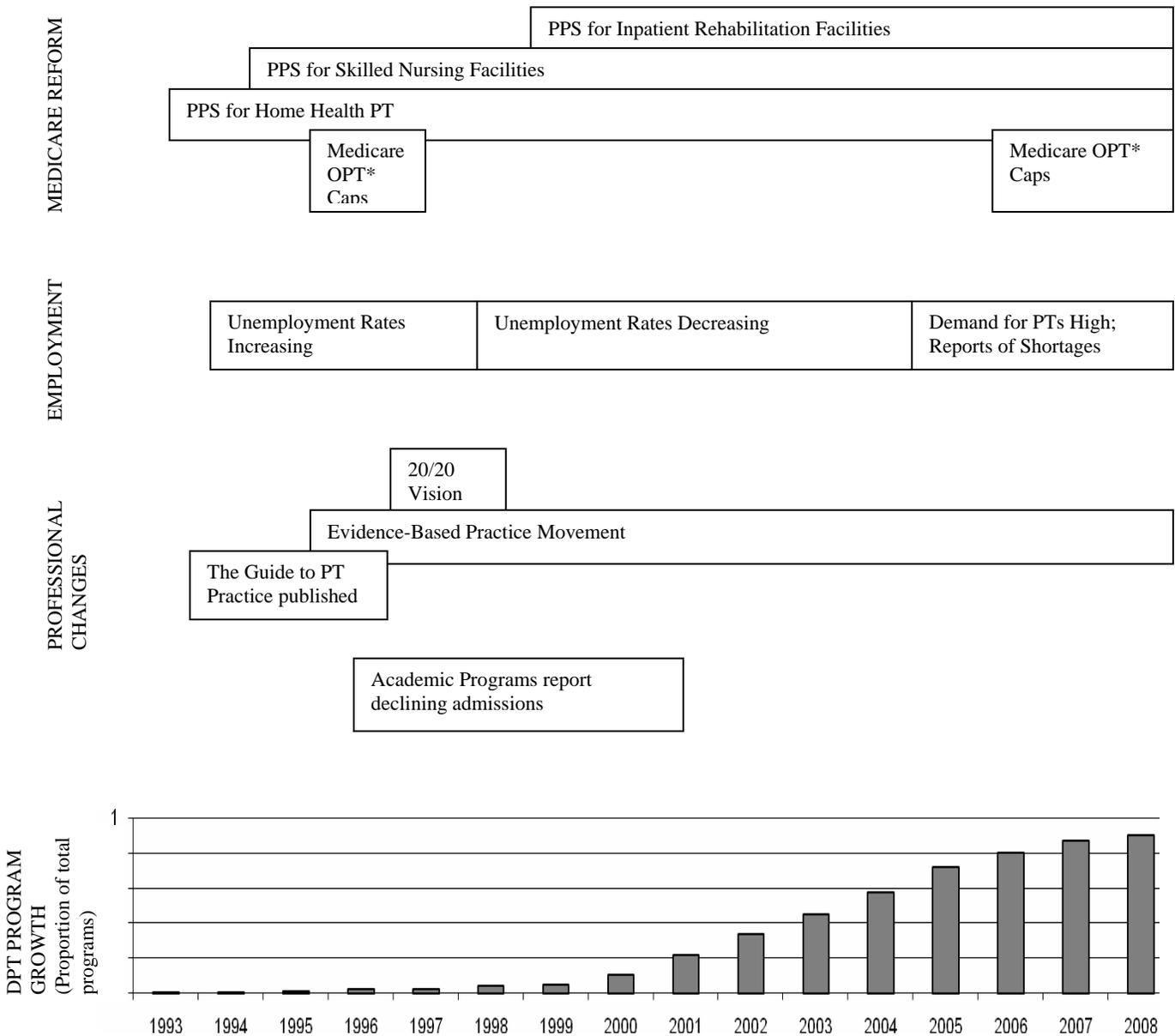


Although the majority of physical therapists currently in the field have master’s or baccalaureate degrees, the share of physical therapists with doctoral degrees has increased substantially over the course of the transition. Based on annual surveys conducted by the APTA, in 1999, 3.7 percent of APTA members reported that their highest degree was a doctorate (either DPT or other doctorate). By 2006, 19.3 percent of APTA members reported that their highest degree was the entry-level or transitional DPT and 5.9 percent had a different doctoral degree; 41.8 percent reported master’s degrees and 30.7 percent reported baccalaureate degrees.<sup>11</sup> While these data are based on APTA members only—a group that may not be representative of all licensed physical therapists—it provides one indication of the educational characteristics of the physical therapy workforce.

**Contextual Factors**

During the time period that the DPT was being adopted, a number of other changes were taking place within the physical therapy profession and the larger health care industry. In addition to influencing the evolution of the DPT, these changes have contributed to an imbalance between supply of and demand for physical therapists over the past decade. Thus, it can be difficult to disentangle the effects of the DPT on the supply of physical therapists from the effects of these broader contextual factors.

**Figure 2. Contextual Factors of the Physical Therapy Profession During Growth of DPT Programs**



\*OPT – outpatient physical therapy

The emphasis on evidence-based practice and autonomy in physical therapy began in the mid-1990s. To clearly articulate the comprehensive and complex role of the physical therapist and provide support for the post-baccalaureate degree, the APTA published Volumes I and II of the Guide to Physical Therapist Practice in 1995 and 1997, respectively.<sup>1</sup> The Guide thoroughly described the scope of physical therapist practice and reflected the expanding role of physical therapy in health care. In response to the work of Guyatt, Sackett, and others<sup>12-14</sup> the profession also joined the evidence-based practice movement in the mid-1990s.<sup>15-17</sup> These professional changes ultimately led to the APTA's Vision 2020<sup>9</sup> which emphasizes autonomous physical therapist practice, the provision of evidence-based services, and increased professionalism.<sup>18</sup>

As DPT programs began to develop, Medicare policy changes had significant impacts on market factors related to physical therapy care. The U.S. Congress passed the 1997 Balanced Budget Act (BBA) with a major goal of reducing the rapid growth of Medicare expenditures in post-acute care settings. The BBA mandated prospective payment for Medicare post-acute care in home health, skilled nursing facilities, and inpatient rehabilitation facilities, settings that employ physical therapists. These systems were phased in at different times for each setting over several years. The BBA also imposed a \$1,500 cap/year on outpatient therapy services. This cap has been in effect intermittently over the past ten years. In response to the BBA, unemployment rates for physical therapists rose and peaked in the fall of 1999 before beginning a reversal over the next six years.<sup>19-22</sup> Academic physical therapist programs also reported a decrease in applications that mirrored the trends in unemployment.<sup>20,23</sup>

The trends in unemployment and applications to physical therapist education programs have reversed in recent years. Based on reports from the APTA and others, the demand for physical therapists has been high for the past three years or longer and there have been accounts of shortages.<sup>21,22,24-28</sup> In the APTA's 2006 Employment Survey, the unemployment rate for physical therapists was 0.4 percent. Academic program chairs are also reporting growth in the number and quality of applicants to the point that the number of qualified applicants exceeds the number of available slots.<sup>20</sup>

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## **Appendix 2**

### **Review of the Literature on the Impact of the Transition to the DPT in Physical Therapy**

**Table 1 – Summary of Survey Studies on the Impact of the Transition to the DPT**

Reference	Purpose of Study	Methods	Findings Specific to the DPT
Bank, Denton, Hannemann (1998) <sup>1</sup>	<ul style="list-style-type: none"> <li>To examine whether employers observe or perceive differences among graduates with different PT degrees (i.e., BS, MPT, DPT) and whether the degree is a factor in hiring decisions.</li> </ul>	<ul style="list-style-type: none"> <li>Written questionnaire mailed to 350 physical therapist employers, most of whom were located in California.</li> <li>Questionnaires mailed in 1997</li> <li>189 questionnaires returned (55% response rate)</li> </ul>	<ul style="list-style-type: none"> <li>A significant proportion of employers indicated they would hire a DPT graduate over a graduate with a BS. There were no significant differences in hiring preferences of an MPT or DPT.</li> <li>A significant proportion of employers found or believed that DPT graduates applied research findings to clinical practice more frequently than MPT graduates.</li> <li>A significant proportion of employers found or believed that DPT graduates would be more effective in the following areas of care relative to graduates with a BS: preparation for patient education, preparation for supervisory roles, application of research findings to care, professional advancement.</li> <li>Reported starting salaries for graduates with a DPT were significantly higher than starting salaries for graduates with a BS. There were no significant differences between starting salaries for graduates with an MPT or DPT.</li> <li>76% of sample stated that their degree of choice for entry into the profession was a master's degree.</li> </ul>
Detweiler, Baird, Jensen, Threkeld (1999) <sup>2</sup>	<ul style="list-style-type: none"> <li>To assess whether practicing therapists desire a post-professional clinical doctorate and to explore their expectations for such a program.</li> </ul>	<ul style="list-style-type: none"> <li>Written questionnaire mailed to a random sample of 396 physical therapists practicing in Iowa and Nebraska.</li> <li>None of the therapists had a DPT degree.</li> <li>290 questionnaires returned (71% response rate)</li> </ul>	<ul style="list-style-type: none"> <li>56% of respondents agreed that a post-professional DPT degree would assist in career advancement, but only 40% believed it would assist them in gaining a higher salary.</li> <li>63% of respondents believed that obtaining a DPT would enhance their professional competence, but only 16% believed it would assist in getting better reimbursement from third-party payers.</li> <li>42% of respondents believed the DPT would enhance the public's recognition of the profession's knowledge base.</li> <li>79% of respondents did not believe that the DPT should be the entry-level degree for the profession.</li> <li>Only 30% of respondents indicated potential interest in obtaining a DPT.</li> </ul>
Domholdt, Kerr, Mount (2006) <sup>3</sup>	<ul style="list-style-type: none"> <li>To provide information on the process and status of the transition to the DPT by physical therapist education programs.</li> </ul>	<ul style="list-style-type: none"> <li>Internet-based questionnaire sent to 191 physical therapist education program directors in spring of 2003</li> <li>145 directors responded (76% response rate)</li> </ul>	<ul style="list-style-type: none"> <li>Two factors most commonly cited by program directors in favor of the DPT were competition for students (cited by 68% of directors) and matching the profession's vision (cited by 66%).</li> <li>Less than half of directors (48%) cited matching practice needs as a rationale in favor of the DPT.</li> <li>The most common reasons for being against the DPT were increased cost to students due to increased length of the program (cited by 61%), lack of</li> </ul>

			faculty resources (cited by 41%), and lack of societal demand/need (cited by 28%).
Hummer, Hunt, Figuers (1994) <sup>4</sup>	<ul style="list-style-type: none"> <li>To investigate perceptions and attitudes toward the entry-level DPT degree.</li> </ul>	<ul style="list-style-type: none"> <li>15 physical therapists and physical therapy educators surveyed in 1992, just prior to the opening of the first entry-level DPT program.</li> <li>Semi-structured, telephone interview.</li> </ul>	<ul style="list-style-type: none"> <li>Respondents who supported the entry-level DPT felt the clinical capabilities of graduates would be enhanced.</li> <li>Respondents opposed to the entry-level DPT felt enhanced clinical capabilities come from extensive clinical experience far beyond what had been proposed in entry-level DPT programs.</li> <li>One respondent stated that with the DPT as the entry-level degree, there would be less incentive for PTs to return to school for advanced clinical training.</li> <li>Most respondents felt there would be increased cost and time to students.</li> <li>Respondents had mixed thoughts on whether the applicant pool would change in size or characteristics.</li> <li>Respondents were divided on whether there would be adequate faculty resources to support entry-level DPT programs.</li> <li>Most respondents felt the introduction of entry-level DPT graduates into the workplace would result in conflict among employers and physical therapists of differing educational levels.</li> <li>Some respondents felt that other health care professionals would not understand the DPT degree.</li> <li>Some respondents felt the DPT degree would increase the status and respect of physical therapists and could potentially lead to greater reimbursement for physical therapy by third party payers.</li> <li>While most respondents expected DPT graduates to have a higher level of skill and expertise, a few respondents felt that the quality of patient care delivered by a new graduate would not differ by degree.</li> </ul>
Johanson (2004) <sup>5</sup>	<ul style="list-style-type: none"> <li>To determine whether DPT and MPT students differ in regard to factors considered when selecting a physical therapist education program.</li> </ul>	<ul style="list-style-type: none"> <li>919 professional physical therapist students from 34 physical therapist education programs completed a written questionnaire.</li> <li>Questionnaires sent out in 2002.</li> <li>Overall response rate (program RR * individual RR) was 78%</li> </ul>	<ul style="list-style-type: none"> <li>MPT students were more likely than DPT students to have considered length of the program, matriculation date, class size, and marketability of the degree by the institution to be important or deciding factors in their program selection.</li> <li>Relative to MPT students, DPT students were more likely to consider the degree conferred by the program, the reputation of the faculty, and the curriculum offered as important or deciding factors in their program selection.</li> </ul>

Johnson (2004) <sup>6</sup>	<ul style="list-style-type: none"> <li>• To examine factors that promote or deter therapists' participation in a t-DPT program.</li> </ul>	<ul style="list-style-type: none"> <li>• Written surveys mailed to a random sample of 1,500 physical therapists in Pennsylvania</li> <li>• 553 surveys completed and returned (36% response rate)</li> </ul>	<ul style="list-style-type: none"> <li>• 66% of respondents did not support entry-level or transitional DPT degree programs.</li> <li>• Respondents who were APTA members and/or who lived in urban areas were more interested in and placed greater importance on the DPT relative to clinicians who were not APTA members and/or who lived in rural areas.</li> <li>• The majority of respondents did not believe that the DPT would enhance their professional competency.</li> </ul>
Wilcox, Weber (2005) <sup>7</sup>	<ul style="list-style-type: none"> <li>• To analyze factors influencing selection of a physical therapist education program.</li> </ul>	<ul style="list-style-type: none"> <li>• 1,256 first year students from 66 physical therapist education programs completed a written survey in 2001.</li> <li>• Program response rate (89%)</li> <li>• Individual response rate (70%)</li> </ul>	<ul style="list-style-type: none"> <li>• Relative to MPT students, a greater percentage of students in DPT programs considered the degree offered by the program and marketability of degree as very influential in program selection.</li> <li>• No other DPT to MPT comparisons were reported in their results.</li> </ul>

**Table 2. Summary of the Literature\* on the Pros and Cons of the Clinical Doctorate in Physical Therapy**

<b>Reasons In Favor of Clinical Doctorate</b>	<b>Reasons Against Clinical Doctorate</b>
Will enhance the public's image of physical therapists.	Will be confusing to the public with so many "doctors."
The requirements of Master's degree programs are similar to that of other clinical doctorate programs.	Will add time and cost for students.
Will give appropriate recognition in line with the responsibilities of the physical therapist.	Will not improve salaries or reimbursement
Is necessary to remain competitive for entry-level physical therapy students.	Will have a negative impact on scholarly activity of faculty due to increased teaching/clinical demands of the program.
The increasing knowledge base of physical therapy deserves a higher degree.	Reflects degree creep.
The changing health care environment requires a higher degree.	Individuals with a DPT have less incentive to come back to school for another doctorate degree which will lead to a decrease in research faculty/advanced practitioners in the profession.
Will facilitate obtaining direct access by giving the profession better bargaining power.	Will decrease the supply of physical therapists especially in underserved areas.
Will allow the profession to better meet the health care needs of society.	Will increase the cost of physical therapy care.
Will increase professionalism by attracting more mature individuals who are more certain of their career decision.	Will change the demographics of the profession and reduce diversity because socioeconomically disadvantaged individuals will be less likely to enroll in a longer, more expensive doctorate program.
Will increase the status of and respect for physical therapists within the medical community.	Will cause workplace conflict between new graduates with a doctorate and experienced staff without a doctorate.
Will increase the clinical expertise of physical therapists and develop clinical scientists	There are not enough faculty to train the students.
Will increase job satisfaction among physical therapists.	Will increase liability and responsibility of physical therapists with no increase in reimbursement.
	Is self-serving to the profession and not the patients.

\*Studies in Table 1 and other reports in the literature<sup>8-14</sup>

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