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Nationwide Acute Care Physical Therapist Practice Analysis Identifies Knowledge, Skills, and Behaviors That Reflect Acute Care Practice

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Nationwide Acute Care Physical Therapist Practice Analysis Identifies Knowledge, Skills, and Behaviors That Reflect Acute Care Practice

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Background. Acute care physical therapy is a rapidly evolving practice area, but little is known about the skills, knowledge, and behaviors necessary for a clinician to be most effective in this area.

Objective. The objective of this study was to perform the first nationwide survey of acute care physical therapists to validate the knowledge, skill, and behavior sets that reflect practice parameters specific for acute care physical therapy.

Design. A survey format was used.

Methods. The Acute Care Physical Therapy Practice Analysis Survey was created on the basis of current literature and consensus of a 9-member Subject Matter Expert (SME) Group. The survey sections addressed knowledge areas, professional behaviors, and patient/client management approaches reflecting practice parameters specific for acute care physical therapy. Additionally, respondent demographic information was collected. Pilot testing necessitated minor changes in the survey. After revision, the survey questionnaire was sent to a sample of experienced acute care physical therapists throughout the United States.

Results. A convenience sample of 522 physical therapists who identified themselves as having extensive experience in acute care practice was used. Of these, 254 completed the survey, for a response rate of 48.7%. Through the use of predetermined decision rules, 34 items were eliminated on the basis of a descriptive analysis of survey results as well as a failure of the items to meet the threshold of specificity for acute care practice, as determined through SME Group consensus.

Limitations. The potential for self-selection bias, a sample weighted heavily with American Physical Therapy Association members and Acute Care Section members, and a small proportion of clinicians (<3%) with less than 1 year of acute care experience may limit generalizability of these results.

Conclusions. The results of this practice analysis describe distinct knowledge, skills, and behaviors specific for acute care physical therapy. The outcomes of the survey might assist in the development of professional (entry-level) acute care competencies, a petition for the recognition of specialization in acute care physical therapy, or both. In addition, the findings of this practice analysis could serve as the foundation for the development of residencies or fellowships in acute care practice.

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Acute Care Physical Therapist Practice Analysis

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A practice analysis involves the systematic study of the professional practice behaviors and content knowledge that comprise practice specific for a setting or patient population. Data collected through a practice analysis describe what practitioners do and identify the requisite skills and knowledge underlying performance. The findings can then be used to benchmark outcomes, therein influencing the design of educational and professional curricula specific for the practice area under study. As defined by the American Physical Therapy Association (APTA), a practice analysis is a “systematic process which provides a recognized group of subject matter experts and consultants the ability to describe the essential knowledge areas, skill areas, and responsibility areas of a competent clinician in a specified area of clinical practice.”^{1(p18)} A well-executed analysis of practice allows distinct practice areas to emerge and be defined.

Seeking to describe the essential knowledge, skills, and behaviors in the practice of acute care physical therapy, the Acute Care Section-APTA sanctioned the execution and completion of a nationwide analysis of acute care clinical practice in 2007. *A Normative Model of Physical Therapist Professional Education*,² the *Guide to Physical Therapist Practice*,³ *Professionalism in Physical Therapy: Core Values*,⁴ and *Minimal Competencies for Entry-Level Physical Therapy*⁵ were used as the framework for designing the study. Input obtained from and consensus achieved by a 9-member Subject Matter Expert (SME) Group further informed the development of the Acute Care Physical Therapy Practice Analysis Survey in November 2007. Prospective SME Group members were selected from the Acute Care Section’s listserv or were nominated for inclusion by the Board of Directors of the Acute Care

Section. All prospective SME Group members were informed of the purpose of the group, the time commitment anticipated, and the requirement for participation in a face-to-face retreat before securing a role in the SME Group.

The final 9-person SME Group was selected to represent variations in acute care practice, education, and geographic location. Three members of the SME Group (M.H.C., E.W.H., and W.J.) possessed historical perspective on the evolution of acute care practice given their tenure with the Competency Task Force of the Acute Care Section-APTA. Insight on depth and scope of practice was provided to the SME Group by clinical specialists in geriatric physical therapy (S.L.G.), orthopedic physical therapy (K.H.), cardiovascular and pulmonary physical therapy (J.M.R. and W.J.), and wound care (E.W.H.). Also represented in the SME Group were educators, including professional (entry-level) DPT faculty (S.L.G., E.W.H., K.S.H., K.H., and J.M.R.), transitional DPT faculty (J.B.C., M.H.C.), and clinical education faculty (M.S.S.). All SME Group members, aside from the consultant (J.B.C.), actively practice in acute care settings or provide consultation for patients with acute health care needs. Diversity of practice experience (eg, health system, hospital, rehabilitation center, and home care) and geographic locale was also ensured before final selection of the SME Group.

The Acute Care Section-APTA funded the practice analysis project, including support for the meeting of the SME Group and the costs of securing a consultant experienced in conducting practice analyses (JBC). Although the Acute Care Section-APTA underwrote the cost of electronic administration of the Acute Care Physical Therapy Practice Analysis Survey, it did not have access to



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- **eAppendix:** Areas of Specific Knowledge, Skills, and Behaviors of Physical Therapists in Acute Care Clinical Practice
- **Discussion Podcast** with author Sharon Gorman and James Smith; moderated by Patricia Ohtake.
- **Audio Abstracts Podcast**

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the data, nor was it consulted during analysis of the data or during the editorial process. The final survey results (eAppendix; available at ptjournal.apta.org) were shared with the Board of Directors of the Acute Care Section, and portions of the results were presented during open forums at the Combined Sections Meeting (CSM) of APTA in both 2009 and 2010.

The results obtained from the Acute Care Physical Therapy Practice Analysis Survey would be used to determine whether there is a body of knowledge specific for acute care physical therapist practice and whether it could be used to develop residencies or fellowships specific for acute care practice. Additionally, the practice analysis might assist in the development of entry-level acute care clinical practice competencies and might provide an initial step toward petitioning the American Board of Physical Therapy Specialties (ABPTS) for the recognition of specialization in acute care.

Method

Survey Instrument

The framework for the survey was developed by consensus of the SME Group from the ABPTS format. Contributing documents included the *Guide to Physical Therapist Practice*³ (the patient/client management model) and ABPTS practice descriptions for various specialties.⁶⁻⁹ The design and administration of the survey were based on Dillon's total design method.¹⁰

The survey contained 4 sections. Section I addressed areas of knowledge expected of an acute care clinician. Items were rated on frequency with a 5-point Likert-type scale, with 0 representing "never" and 4 representing "daily"; on importance with a 4-point Likert-type scale, with 0 representing "not important" and 3 representing "very

important"; and on level of judgment with a similar 4-point scale, with 0 representing "do not use" and 3 representing "analysis." Section II investigated expectations regarding professional practice (professional roles, responsibilities, and values). Section III investigated expectations regarding patient/client management. In both sections II and III, rating scales similar to those implemented for frequency and importance in section I were used. In addition, sections II and III incorporated a scale for level of criticality, designed as a 4-point Likert-type scale, with 0 representing "not critical" and 3 representing "extremely critical." Section IV captured demographic information.

Pilot Survey

A convenience sample of 21 acute care physical therapists was used for pilot testing. Respondents were colleagues of the SME Group who voluntarily agreed to participate. The SME Group members were present as they completed the survey to offer clarification, to measure time for completion, and to document questions and comments about the tool.

Feedback from respondents participating in pilot testing was positive overall, and the average completion time for the survey was 75 minutes. Respondents had few questions about the rating scales and provided comments that were editorial in nature. Suggested edits were made, and the survey was converted into an electronic format.

Final Survey Administration

The survey was administered electronically. No formal institutional review board approval was sought for this survey given the exempt nature of the research and the compatibility of survey design and administration with the principles of the Declaration of Helsinki.¹¹ All participant data were anonymous and protected. Before beginning the survey, partici-

pants were informed that participation was voluntary and that the results would be both anonymous and reported only in the aggregate.

All physical therapist members of the Acute Care Section-APTA were invited to participate in the survey via both e-mail and the Acute Care Section listserv. Nonmembers were encouraged to participate as well, with the listserv invitation explicitly stating that prospective participants were not required to be members of APTA or of the Acute Care Section. Additionally, attendees of the 2008 CSM were solicited via a written form of the same e-mail invitation. Inclusion criteria for participation were as follows: working in acute care physical therapist practice and 75% of practice in acute care physical therapy or adequate expertise in acute care. Part-time practitioners, those in academic disciplines, researchers, and clinicians not meeting the criterion of 75% of practice in acute care physical therapy were still eligible if they considered themselves to be "acute care physical therapists" with extensive experience in acute care.

The e-mail blast to all Acute Care Section physical therapist members, the listserv solicitation, and the invitations sent to 2008 CSM attendees yielded 587 physical therapists who both identified themselves as meeting the inclusion criteria and expressed willingness to complete the online survey. E-mails sent to potential respondents included a link to the online Acute Care Physical Therapy Practice Analysis Survey with instructions to return the completed survey within 2 weeks. E-mail reminders were delivered to nonrespondents after 1 week and again after 10 days. The online survey was extended 3 days, and a final e-mail reminder was sent 4 days before the requested return date for the survey.

Respondents were provided with the opportunity to call or e-mail the project coordinator with questions about the survey. The only correspondences received were 4 e-mailed questions about how to answer the survey and the process for stopping and restarting the online survey once initiated.

The ordinal data were analyzed descriptively on the basis of the frequency of responses. The SME Group established decision rules *a priori* for defining acute care practice; these were derived from the ratings on frequency, importance, and level of judgment for section I and from the ratings on frequency and level of criticality for sections II and III.¹⁰ In section I, addressing areas of knowledge, items were included when at least 65% of the respondents rated the importance of an item as 2 or 3 (moderately or very important) and the level of judgment as 2 or 3 (application or analysis). In section II, investigating expectations regarding professional practice (professional roles, responsibilities, and values), and in section III, investigating expectations regarding patient/client management, items were included when at least 65% of the respondents rated the importance of an item as 2 or 3 (moderately or very important) and the level of criticality as 2 or 3 (proficient or expert skill level). With respect to frequency, an item was included when at least 65% of the respondents rated it as higher than 0 (never). When the level of criticality, judgment, or importance was reported as high, a lower frequency rating was of less concern.

In the event of a discrepancy, such as when a rating of importance met the 65% threshold but a rating of the level of criticality did not, the item was forwarded to the SME Group for discussion. The SME Group was asked to ascertain whether a clinician in acute care practice would use

particular knowledge differently or would function more effectively or efficiently than a clinician in non-acute care practice. An item was retained when SME Group consensus indicated that it represented the discrete scope of practice of a therapist in acute care practice more so than the function of a clinician, physical therapist assistant, or technician in non-acute care practice.

Role of the Funding Source

This project was funded by the Acute Care Section-APTA. This supporting source funded a paid consultant to the SME Group, a meeting for the SME Group to formulate the first draft of the practice analysis survey, and electronic administration of the survey. This funding source was not involved in study design; data collection, analysis, or interpretation; writing of this report; or submission of this report for dissemination or publication.

Results

A total of 65 surveys were returned unanswered either because of e-mail failure or because the potential respondents felt unqualified to complete the survey (eg, were not working in acute care practice). The final number of successful links to complete the survey was 522, and the final response rate was 48.7% (254 responses). Those 254 responses were used in the data analysis. Previously completed pilot surveys (N=21) were not used in the final data analysis.

The demographic characteristics and practice parameters of the respondents are shown in Tables 1 and 2, respectively. All regions of the United States were represented by the respondents (Fig. 1).¹² The wide range of patients' diagnoses and comorbidities encountered by the survey respondents is shown in Figure 2. The majority of respondents were employed full time in acute care

practice, with greater than 75% having 6 or more years of experience in acute care practice. Additionally, most respondents described spending 60% of their time on the delivery of direct care to patients with acute illnesses. Although the respondents reported treating patients of all ages throughout the life span, adults between 65 and 85 years old were the most frequently encountered (38.6%).

Table 3 shows the number of items included, reviewed, or dropped from the final practice analysis. Most items scored high on frequency as well as criticality and judgment. In accordance with previously established decision rules, 34 items were eliminated from sections I, II, and III of the survey. When a discrepancy occurred, the SME Group came to consensus about retaining or eliminating the item. Eliminating an item from the results did not signify that acute care physical therapists did not use that particular intervention, but rather that the intervention did not meet the threshold of specificity for acute care practice, was more technical in nature, or was performed in a relatively comparable fashion by physical therapist assistants. For example, items deleted from section II (expectations regarding professional practice) included "demonstrating professional behaviors in all interactions" and "demonstrating cultural sensitivity in all professional interactions." Removal of these items reflected the lack of significant performance variations among physical therapists in acute care practice, physical therapists in non-acute care practice, and physical therapist assistants.

The majority of deleted items initially were from section III (expectations regarding patient/client management). This section included examination tests and measures, coordination, documentation, communication, and instruction for patients,

families, and caregivers. Deleted items included, but were not limited to, “assessment of assistive and adaptive devices,” “gait, locomotion, and balance,” “motor performance,” “pain assessment,” “infection control,” and “positioning.” Because these items were not deemed to be exclusive to physical therapists in acute care practice, they were excluded from the final practice analysis report.

A compilation of the final areas of specific knowledge, skills, and behaviors of physical therapists in acute care practice, based on the survey results and SME Group consensus, is shown in the [eAppendix](#). Sample descriptions from the practice areas are shown in Table 4.

Discussion

Although this work may resemble previously reported practice analyses, the results highlight the unique factors of acute care physical therapist practice ([eAppendix](#)). Therapists in acute care practice are set apart from entry-level therapists and specialists in other areas because of the challenges resulting from complex environmental influences as well as fluctuating physiologic presentations of patients. Physical therapists in acute care practice must be able to recognize and limit risk to patients who have medically complex conditions and are medically fragile when implementing exercise and activity. Therefore, therapists in acute care practice must possess the depth and breadth of knowledge specific for acute care and patients with acute illnesses throughout the life span and across multiple body systems. Quality care for a patient with an acute illness reflects a therapist’s ability to accurately evaluate the patient’s present and past medical states, including medical-surgical interventions undertaken, to formulate and implement an individualized, evidence-supported rehabilitative plan of care. Therapists practicing with patients

Table 1. Demographic Characteristics of Respondents to the Acute Care Physical Therapy Practice Analysis Survey (Section IV) (n=254)^a

Characteristic	No.	%
Sex		
Male	41	16.2
Female	212	83.8
Age (y)		
<25	0	0
25–34	76	30.0
35–44	85	33.6
45–54	64	25.3
55–64	28	11.1
≥65	0	0
Racial or ethnic background		
American Indian or Native Alaskan	1	0.4
Asian or Pacific Islander	13	5.2
African American or black (not of Hispanic origin)	6	2.4
White (not of Hispanic origin)	227	89.4
Hispanic or Latino	2	0.8
Pacific Islander or Native Hawaiian	0	0
Other	2	0.8
Current employment status		
Full-time salaried/hourly	221	88.0
Part-time salaried/hourly	30	12.0
Full-time self-employed	0	0
Part-time self-employed	0	0
Years in practice as physical therapist		
<1	6	2.4
1–2	12	4.8
3–5	29	11.5
6–10	49	19.4
11–15	51	20.2
16–20	28	11.1
21–30	50	19.8
≥31	27	10.7
Years in acute care physical therapist practice		
<1	7	2.8
1–2	16	6.3
3–5	40	15.9
6–10	58	23.0
11–15	57	22.6
16–20	27	10.7
21–30	35	13.9
≥31	12	4.8

(Continued)

Table 1.
Continued

Characteristic	No.	%
Entry-level physical therapist education		
Certificate	6	2.4
Bachelor's degree	121	47.8
Master's degree	110	43.5
DPT	16	6.3
Highest degree earned beyond entry level		
Advanced master's degree in physical therapy	14	5.7
Other master's degree	45	18.3
DPT	40	16.3
Doctoral degree (PhD, EdD, clinical doctorate, or other)	10	4.0
No degree beyond entry level	137	55.7
ABPTS board certification specialty		
Cardiovascular and pulmonary	10	3.9
Clinical electrophysiology	1	0.4
Geriatrics	12	4.7
Pediatrics	1	0.4
Orthopedics	0	0
Neurology	4	1.6
Sports	0	0
Women's health	0	0
Other certification (eg, certified wound specialist or certified athletic trainer)		
Yes	64	27.4
No	170	72.6
American Physical Therapy Association member		
Yes	214	85.6
No	36	14.4
Acute Care Section member		
Yes	193	76.9
No	58	23.1

^a DPT=Doctor of Physical Therapy, ABPTS=American Board of Physical Therapy Specialties.

who have acute illnesses also serve to help patients and caregivers navigate the complex medical system, demonstrate foresight to forestall secondary complications for future physical health and function with preventive actions, and advocate to ensure maximal levels of patients' mobility and physical performance. To this end, therapists in acute care practice must be proficient in communicating, collaborating, and advocating at advanced levels with numerous and di-

verse specialist colleagues. Although some of the aforementioned functions may be seemingly generic to physical therapists at large, the frequency with which medical instability and unpredictability are encountered in this patient population highlights the need for a unique set of skills, behaviors, and knowledge specific for acute care practice. The results of this practice analysis demonstrate that clinicians in acute care practice must thoughtfully integrate a patient's dynamic and fluc-

tuating medical status, concomitant comorbidities, health preferences and beliefs, and available resources (both human and fiscal) when prioritizing key examination findings reflecting multisystem involvement throughout the life span.

Many parallels can be seen between the practice of hospital-based medicine by hospitalists and acute care practice by physical therapists. First described by Wachter and Goldman in 1996,¹³ a hospitalist is a physician who specializes in the care of patients who are hospitalized and is described as "a generalist analog to the primary care physician, but one who would spend all day in the hospital, managing patients, coordinating care, and returning patients to their primary care doctors at the time of discharge."^{14(p5)} Hospitalist practice evolved during the late 1990s in response to the extreme illnesses of patients who are hospitalized, the increased use of technologically advanced testing for medical treatment and diagnosis, the increased pressure to decrease hospital length of stay through expedited discharges, and the complexity of working with patients who have multiple chronic illnesses.¹⁴ Physical therapy was similarly affected by such changes, furthering the unique role that physical therapists in the hospital setting serve in coordinating discharges to variable settings, identifying necessary durable medical equipment, and ensuring referrals to other providers for both expert opinion and follow-up care. Between 1970 and 2006, the average length of stay in a US hospital decreased from 7.8 days to 4.8 days.¹⁵ Consequently, physical therapists, the recognized experts in the safe movement and function of patients who have acute illnesses, became more efficient and skilled at rendering discharge plans. This single example is reflected in multiple areas of the practice analysis results. Although other physical

Table 2

Practice Parameters of Respondents to the Acute Care Physical Therapy Practice Analysis Survey (Section IV) (n=254)

Parameter	No.	%
Primary practice setting		
Acute care hospital	215	85.3
Academic institution (postsecondary)	19	7.5
Health system	10	4.0
Hospital-based outpatient facility or clinic	3	1.2
Other	3	1.2
Acute care rehabilitation hospital	2	0.8
Type of hospital, if primary employment is hospital		
Community hospital	90	36.7
Level 1 trauma hospital	72	29.4
Academic medical center	66	26.9
Tertiary-care hospital	14	5.7
I do not work in a hospital	3	1.2
Mean time spent on professional activities (%)		
Direct acute care physical therapy patient/client management		60.2
Administration or management		18.4
Teaching		8.6
Direct patient/client management other than acute care		5.2
Consultation for acute care		4.7
Research		1.8
Other		1.2
Mean age (y) of patients seen routinely (%)		
<21		5.3
21–45		14.7
46–64		24.5
65–80		38.6
≥81		16.9
Educational method that most influenced development of current acute care clinical skills		
Continuing education courses, workshops, seminars, or study groups	73	29.1
In-service or peer interaction	63	25.1
Mentoring	48	19.1
Self-study (books, articles, videotapes, or home-study courses)	25	10.0
Graduate or post-entry-level formal education	20	8.0
Other	13	5.2
Formal physical therapy clinical residency	9	3.6
Willingness to develop acute care residency or fellowship		
Yes, definitely	66	26.3
Yes, but not for a few years	93	37.1
Probably not	73	29.1
No	19	7.6
Plans to enroll in acute care residency or fellowship		
Yes, definitely	29	11.6
Yes, but not for a few years	52	20.7
Probably not	105	41.8
No	65	25.9

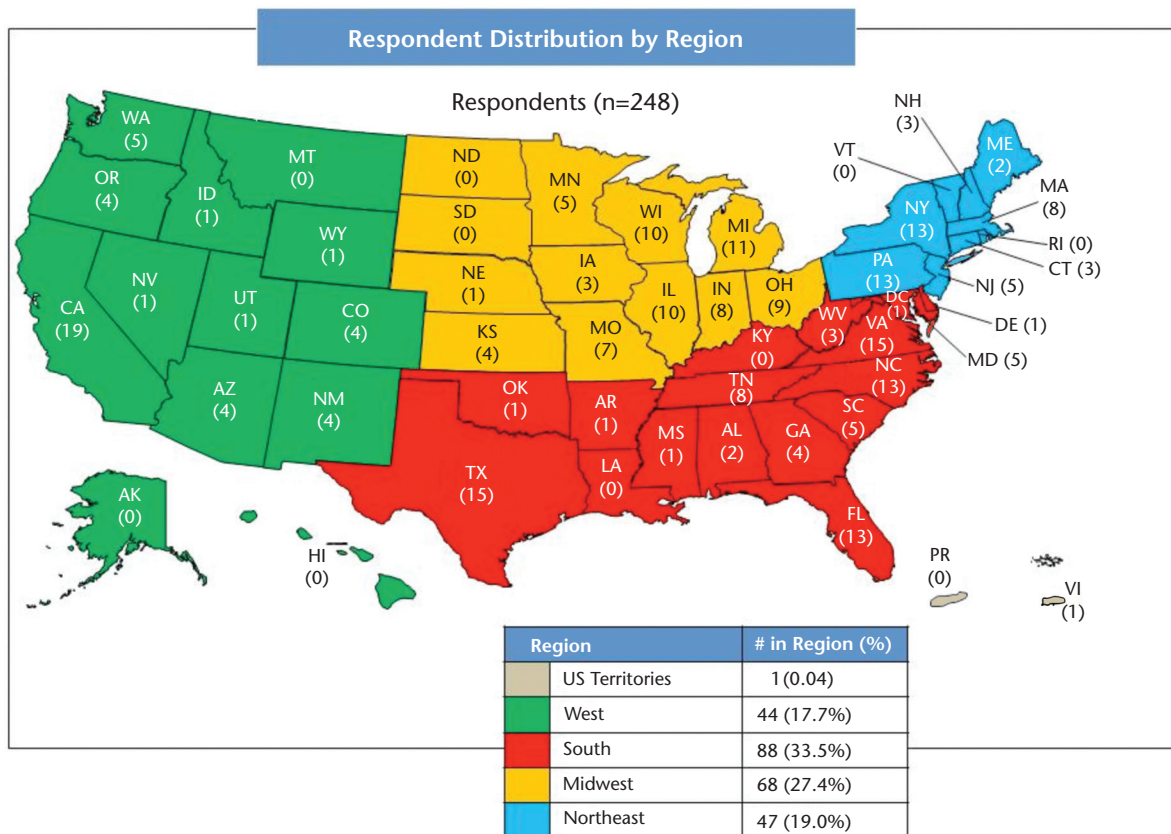


Figure 1. Respondent distribution by region. Data for zip code (to determine state of residence) available for only 248 respondents.

therapist practice arenas address specific populations who have acute illnesses or medically complex conditions, they are often limited in their focus to a period of the life span (eg, geriatric and pediatric) or to a body system (eg, neurologic, orthopedic, and cardiovascular and pulmonary). Because acute care practice is “dynamic, uncertain, and unpredictable,”^{16(p265)} physical therapists serving in this area must possess knowledge, skills, and behaviors suited to fast-paced, high-risk environments that are not constrained by age or body system. These physical therapists must also possess the abilities and attributes necessary to convey to multiple stakeholders the rationale underlying prescribed evidence-based interventions.¹⁷⁻¹⁹

The evolution of medical specialization, as described by Wachter,¹⁴ in-

volves specialists who focus on diseases or disorders (eg, dermatologists and cardiologists), populations of patients (eg, pediatricians and geriatricians), procedures or technologies (eg, radiologists and interventional cardiologists), complex disease types (eg, oncologists and infectious disease specialists), and practice settings (eg, hospitalists and emergency medicine specialists). Paralleling such categorizations to physical therapy, acute care physical therapy would emerge as a hybrid of setting-based specialization and complex disease type specialization.

Understanding the depth and breadth of therapist knowledge, skills, and behaviors across multiple factors is another way to gain appreciation for physical therapist practice (Fig. 3). One factor is the body

systems contributing to patients’ impairments, activity limitations, and participation restrictions. The *Guide to Physical Therapist Practice*³ describes 4 primary systems of concern to physical therapists: musculoskeletal, neuromuscular, cardiovascular and pulmonary, and integumentary. Another factor relates to a patient’s status along the life span continuum, ranging from infancy through senescence. Many existing ABPTS-recognized specialties fall within 1 of these 2 domains.⁶⁻⁹ Both pediatric and geriatric clinical specialties represent emphasis on a single pole of the life span while simultaneously requiring expertise spanning body systems. Other ABPTS-recognized specialties, such as neurology, cardiovascular and pulmonary, orthopedics, and women’s health, represent focused expertise in addressing body

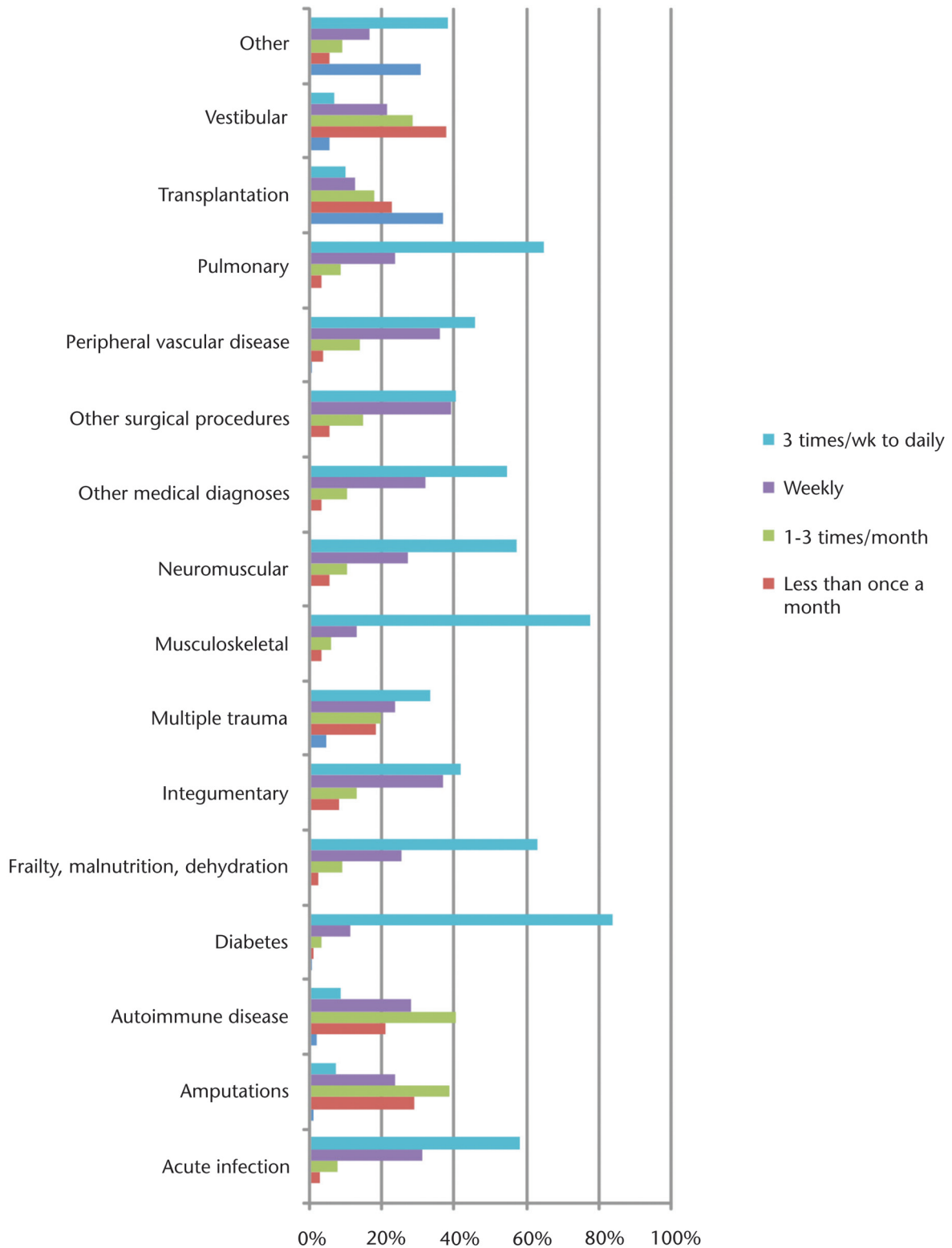


Figure 2. Diagnoses and comorbidities commonly encountered in acute care practice.

Table 3.
Evolution of Items in the Acute Care Physical Therapy Practice Analysis Survey^a

Section	Content Area	No. of Items in Pilot Survey	No. of Items in Final Survey	No. of Items Flagged for SME Group Review	No. of Items Deleted After SME Group Review	No. of Items Retained
I	Areas of knowledge about acute care clinical practice	47	47	3	0	46 ^b
II	Expectations regarding professional practice (professional roles, responsibilities, and values)	25	24 ^c	8	4	20
III	Expectations regarding patient/client management	110	110	38	30	80
IV	Respondent demographic characteristics and practice parameters	23	23	N/A	N/A	N/A

^a SME=Subject Matter Expert, N/A=not applicable.
^b Two items were merged on review.
^c One duplicative item was removed.

system pathologies that may occur throughout the life span. Another factor—the one that provides the primary focus for acute care practice—relates to a patient’s status in the episode of care across the health care continuum. The results of the Acute Care Physical Therapy Practice Analysis highlight the acute phase of illness or injury and more broadly cover body systems (often multisystem involvement) and the life span. A distinct emphasis on the acute phase of the continuum of care transcends currently recognized specialties. Figure 3 depicts how a shift in emphasis on 1 or more components can yield distinct areas of practice despite some overlap. The potential exists to describe acute care practice, via these results, as unique in its focus on the acute phase of the continuum of care with broad coverage of multiple body systems across the life span.

This practice analysis does have limitations. The generalizability of the results is limited because of the sampling methodology used and the potential for self-selection bias in respondents. Because the majority of the respondents were both APTA members and Acute Care Section

members, the results may be the expression of more informed or highly skilled practitioners. However, this limitation is comparable to those reflected in similar practice analysis surveys of physical therapists.⁶⁻⁹ Although the respondents did represent variety in geographical distribution across the United States and across different employment facilities, they were predominantly hospital based. A small percentage of respondents had less than 1 year of practice as physical therapists (2.4%) or less than 1 year of experience in acute care practice (2.8%). Such factors may have influenced the survey results to a slight degree. The authors acknowledge the potential for bias inherent in the study’s funding source, the Acute Care Section-APTA. The authors affirm that the Acute Care Section-APTA had no direct involvement in the study design, survey creation, data collection, data analysis, or preparation of this report. Further, at no time did the Acute Care Section-APTA attempt to influence the consultant or the SME Group in their collection of the data or interpretation of the survey results. Historically, other APTA sections have served as funding sources for similar types of research,

given the high costs associated with conducting a methodologically sound practice analysis.⁶⁻⁹

The results of the Acute Care Physical Therapy Practice Analysis reveal specific practice parameters that physical therapists in acute care practice believe allow them to more effectively and efficiently meet the diverse and complicated needs of people who have acute illnesses compared with therapists not familiar with acute care practice. Acute care practitioners use specific and identifiable knowledge, skills, and behaviors in patient management more frequently, with more emphasis, and with higher criticality reflective of the population of people who have medically complex conditions or are medically frail coupled with the commonly encountered short time frames for interventions.

The final compilation of knowledge, skills, and behaviors of physical therapists in acute care practice (*eAppendix*) is based on the patient/client management model in the *Guide to Physical Therapist Practice*,³ with emphasis on areas that distinguish the practice of an acute care clinician. This listing of specific practice

Table 4.
Results of Acute Care Physical Therapy Practice Analysis and Sample Descriptions^a

Practice Area	Sample Descriptions
Areas of knowledge expected of an acute care clinician	
Foundation sciences	
Anatomy	Hematopoietic system (eg, role of RBCs in oxygen transport, role of WBCs in immune system processes, role of proteins within blood)
	Endocrine system (including hormonal influences)
	Hepatic and biliary systems
Behavioral sciences	
Psychology	Abnormal, developmental, depression, addiction, eating disorders, and pain
Ethics in medicine and legal implications	End-of-life issues, organ donation, and appropriateness of therapies or interventions for medical and surgical conditions
Clinical reasoning	Articulation of why mobilization is or is not indicated on the basis of history and available diagnostic procedures
Clinical sciences	
Critical care medicine	Risks of exercise vs risks of rest
Emergency and trauma medicine	Immediate care or emergency department interventions
Complex comorbidities	Indications and contraindications for exercise
Pathology and pathophysiology	Electrolyte homeostasis
	Endocrine or hormonal balance
	Gastrointestinal system
	Integumentary system
	Urologic system
Clinical diagnostic procedures	
Pressures	Cardiac and cerebral pressures
Imaging	MRI, CT, radiography, swallowing study, VQ scan, ultrasound, bone scan, and PET scan
Laboratory tests	Coagulation, immunology screen, ABGs, and CBC
Medical interventions	Bronchoscopy, thoracentesis, biopsy, and abdominal taps
Critical inquiry	Appraisal and application of research findings to acute care practice
Expectations regarding professional practice (professional roles, responsibilities, and values)	
Professional responsibilities	
Knowledge of state practice act	Titration and implementation of oxygen, debridement and wound care, and medical line and tube management
	Procedures for monitoring of patients (eg, assessing blood glucose level via finger stick, monitoring oxygen saturation)
Professional behaviors	
Advocate for patients with acute health care needs	As part of the health care team to ensure that patients receive appropriate care and follow-up
Leadership	
Serve as a model	Regarding prioritization in examination of patients and intervention
	Regarding professionalism and maturity in decision making and interpersonal interactions
Participate in activities beyond the immediate scope of responsibilities	To expand, improve, or define practice or awareness of acute care physical therapy (eg, grand rounds, community education, student education, consultation on clinical pathway development)
Risk management	
Use risk management strategies	Including informed consent, safety, and timing of discharge decisions
Professional development	
Maintain current knowledge and skill in acute care physical therapy	Participate in continuing professional development (eg, residency or fellowship education, continuing education seminars, self-study, journal clubs)

(Continued)

Acute Care Physical Therapist Practice Analysis

Table 4.
Continued

Practice Area	Sample Descriptions
Social responsibilities	
Provide services to patients who are underserved and underrepresented	Including <i>pro bono</i> work
Evidence-based practice	
Critically evaluate evidence specifically pertaining to patients with medically complex conditions	Including techniques and technology, legislation, policy, and environments related to acute care
Expectations regarding patient/client management	
History and systems review	
Obtain through interviews and other sources	Medical record review; laboratory and other test results; and comments of families, caregivers, and support team
	Comorbidity and medical complexity
	Medication reconciliation
	Behaviors of appropriate and inappropriate physiologic responses to activity
	Clinical tests, diagnostic studies, radiologic studies, physiologic monitoring, and laboratory analysis
	Medical and surgical interventions, including complementary and alternative medicine approaches
Perform systems review to assess physiologic and anatomic status	Medical stability and metabolic homeostasis, including renal and endocrine systems
Examination	
Prioritize and perform tests and measures	Head, ear, eye, nose, and throat examinations
	Aerobic capacity, including physiologic responses to functional activities and evidence of positional vs exertional vs postexertional changes (eg, dyspnea scales, desaturation, hypotension)
	Circulation, including heart rate, rhythm, sounds, pressures and flows, insufficiency, and use of Doppler ultrasound
	Examination and reassessment in quick and efficient manner due to short length of stay (US average, <4.8 d) ¹⁵
Evaluation	
Interpret data by correlating history and systems review, physical examination, and diagnostic tests	Effects of medications, nutrition, and fluid shifts on homeostasis
	Implications of medical and surgical interventions for rehabilitation potential
	Integration of limitations related to comorbidities that will affect plan of care
Determine need for further examination or consultation by physician or other health care provider	Signs and symptoms of diminished or altered neurologic status
	Cardiovascular and pulmonary decompensation
	Intractable pain
	Suspected substance abuse
Respond to data emerging from examination and interventions by modification and redirection of interventions	Analyze results of tests and measures to develop an individualized, specific exercise and functional mobility prescription
	Recognize and respond to potentially life-threatening changes in physiologic status
	Integrate data from monitors, tests, screenings, and examinations used or performed by other health care providers
	Determine mobility parameters given a patient's specific disease process or recovery phase
Diagnosis	
Establish a physical therapy diagnosis for patients/clients of any age and having acute illnesses	Considering pathology, impairments, and physical or activity limitations
	Associated with, but not limited to, physiologic changes, visceral dysfunction, and hormonal changes

(Continued)

Table 4.
Continued

Practice Area	Sample Descriptions
Prognosis	
Synthesize knowledge to determine prognosis for patients	Include past medical history, hereditary factors, surgical history, other pertinent risk factors, and current examination findings
	Integrate the influences of comorbidities and current medical sequelae on prognosis time line (eg, delayed wound healing time associated with diabetes, vascular disease, or oxygen dependence)
	Consider impact of depression and other psychosocial issues (eg, cancer, end-of-life issues, potential disability)
Develop a plan of care specific for patients/clients with acute illnesses	Consider unique safety concerns (eg, involvement of multiple systems, infection containment, criticality)
	Consider limitations in service availability (due to either payment limits or access to care) and document what would be expected with fewer limitations
Interventions	
Coordination, communication, and documentation	Utilize clinical tests, diagnostic studies, radiologic studies, physiologic monitoring (eg, via life support and hemodynamic stability monitoring, mechanical ventilators, IABPs, VADs), and laboratory analysis
	Advocate for patients in navigating the medical system to achieve optimal functional outcomes (eg, timing and selection of interventions, discharge planning, equipment acquisition)
	Provide consultation services to peer professionals across the continuum of care regarding patients/clients with multiple medical sequelae, risk factors, impairments, physical limitations, and participation restrictions
	Synthesize multiple sources of medical information pertinent to rehabilitation outcomes into a format appropriate for patients, families, and caregivers to facilitate understanding
	Ensure that the plan of care is based on sound physiologic principles, the ability of patients to participate, and available resources
	Communicate critical and potentially life-threatening conditions and changes in a patient's status to members of the health care team in a timely and appropriate manner (eg, inappropriate hemodynamics during functional activities or gait)
	Convey medically appropriate information to facilitate progression to the appropriate next level of care (eg, deliberate with admission coordinators, third-party payers, physician directors, and utilization reviewers)
Patient- or caregiver-related instruction in areas of acute care practice	Nutrition and healing (eg, fracture or wound healing, j tube, g tube, TPN, hydration)
	Pharmacologic impact on rehabilitation (eg, impact of current medical condition on pharmacokinetics and pharmacodynamics, polypharmacy)
	Transitions to different levels of care (eg, what to expect, how to self-advocate for correct level of care)
	Wound management
Procedural interventions	Select and specifically prescribe or modify interventions on the basis of type and severity of medical or surgical pathology, impairments, or participation restrictions
	Provide therapeutic exercise and functional mobility training for patients requiring invasive and noninvasive monitoring to determine intensity, duration, frequency, mode, and need for supportive devices (eg, oxygen)
	Provide therapeutic exercise and functional mobility training for patients who have medically complex conditions and are medically fragile (eg, polytrauma, thrombocytopenia, transplantation)
	Provide therapeutic exercise and functional mobility training, including monitoring of responses, for patients on cardiovascular, renal, and ventilation assist devices
	Provide integumentary repair and protective techniques (eg, selective and nonselective debridement, therapeutic technologies, specialty support surfaces, positioning, electrotherapeutic modalities, physical agents, mechanical modalities), dressings, and topical agents
Outcomes	
Use outcomes to modify practice	Regarding delivery of care to patients with complex medical and rehabilitative needs

^a RBCs=red blood cells, WBCs=white blood cells, MRI=magnetic resonance imaging, CT=computerized tomography, VQ=ventilation-perfusion, PET=positron emission tomography, ABGs=arterial blood gases, CBC=complete blood count, IABPs=intra-aortic balloon pumps, VADs=ventricular assist devices, j tube=jejunostomy tube, g tube=gastrostomy tube, TPN=total parenteral nutrition.

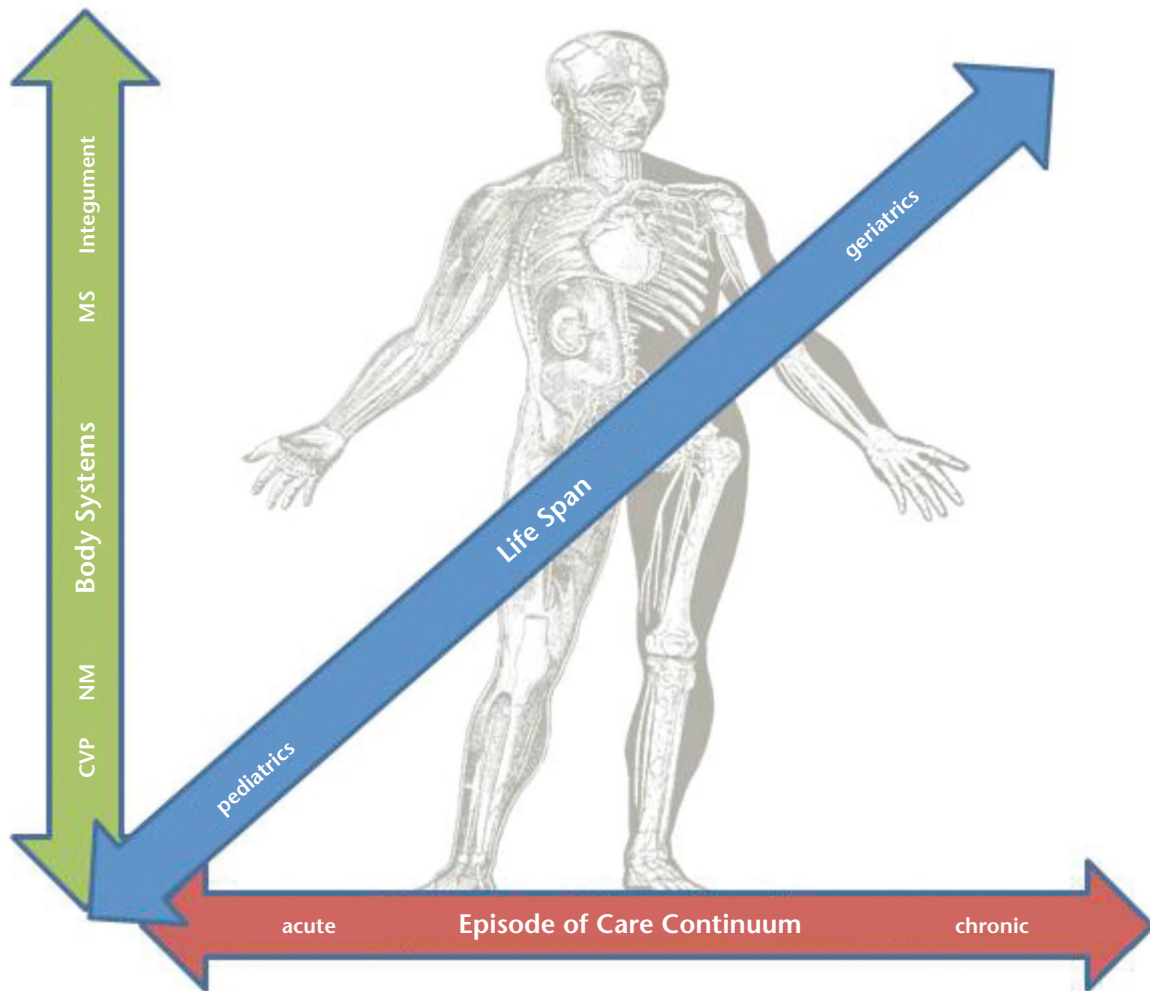


Figure 3. Components contributing to specialization. CVP=cardiovascular and pulmonary, MS=musculoskeletal, NM=neuromuscular.

parameters was validated through the first nationwide practice analysis specific for acute care physical therapy and resulted from an extensive, consensus-driven survey method with an excellent response rate (48.7%). In light of constantly changing health care practice and delivery, there is a need to revisit and review this document on a recurring basis for revalidation and potential update of the items contained within. Further research is needed to determine whether experts or master clinicians in acute care physical therapy can be differentiated from these more generalized results, perhaps demonstrating that specialization specific for

acute care practice can be described. These results have many potential future applications, such as serving as the basis for the recognition of acute care physical therapy as an area of clinical specialization by ABPTS and as an educational foundation for both entry-level physical therapist education and residencies and fellowships in acute care practice.

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Simpson provided writing. Dr Gorman, Mr Bose, Dr Harris, Dr Crist, Dr Holtgreffe, Dr Simpson, and Dr Bryan Coe provided data collection. Dr Gorman, Dr Wruble Hakim, Ms Johnson, Dr Harris, Dr Crist, Dr Ryan, and Dr Bryan Coe provided data analysis. Dr Gorman and Dr Bryan Coe provided project management. Dr Gorman provided fund procurement. Dr Gorman, Mr Bose, and Dr Harris provided participants. Dr Bryan Coe provided clerical/secretarial support. All authors provided consultation (including review of manuscript before submission).

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