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Analysis of Practice for the Physical Therapy Profession: Entry-Level Physical Therapists

Final Report

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Executive Summary

This report describes the process, methodology, and results of the analysis of practice of physical therapy conducted from 2018 to 2022 by the Federation of State Boards of Physical Therapy (FSBPT) in partnership with the Human Resources Research Organization (HumRRO). The primary goal of this study was to examine and track the current state of physical therapy practice in the U.S. and update the test specifications for the National Physical Therapy Exam (NPTE) maintained by FSBPT. The approach involved gathering and integrating data about the profession to ensure the content of the exam (a) is relevant to the current professional practice and (b) reflects the opinions and expertise of a diverse group of stakeholders. This report focuses on the Physical Therapist (PT) analysis of practice.[1]

The practice analysis involved the construction and administration of an occupational survey to a large, representative sample of PTs from across the United States and its territories. The purpose of the survey was to collect information on the work activities (WAs) and knowledge and skill requirements (KSRs) that define the practice of entry-level physical therapy. Survey respondents evaluated the criticality of the WAs and KSRs for safe and effective entry-level physical therapy practice using Likert-type rating scales. The survey was administered annually between 2018 and 2022 and over 15,000 PTs completed the survey during that timeframe.

The study was conducted with the help of multiple expert groups identified by FSBPT. During the interim years of the study (2018-2021), FSBPT's Exam Chairs provided guidance and consultation to the project staff during annual reviews. Their guidance helped ensure the WA and KSR statements included on the survey were clear, comprehensive, and appropriate for the target respondent population. In 2022, the 14-member PT Task Force reviewed the results from each year of the study and provided consultation on updates to the test specifications for the NPTE exam blueprint.

Of the 245 WAs included on the survey, the Task Force identified 93% as critical for entry-level PT practice. Of the 156 KSR statements on the survey, the Task Force identified 83% as critical for entry-level PT practice. The WAs and KSRs omitted from the test specifications were generally consistent with statements omitted in the 2016 practice analysis. Based on their judgment of critical WAs and KSRs, the PT Task Force's recommended updates resulted in blueprint specifications that are very similar to the specifications established during the 2016 practice analysis. At the principal content domain level, the proportions changed by no more than one percentage point. The largest change recommended by the PT Task Force was to increase the coverage of the Neuromuscular & Nervous System from 23.5% to 24.5%.

[1] We describe the Physical Therapist Assistant (PTA) analysis of practice in a separate report (Harris, J. L., Caramagno, J. P., & Rogers, A. P. (2022). *Analysis of Practice for the Physical Therapy Profession: Entry-Level Physical Therapist Assistants* (No. 095). Alexandria, VA: Human Resources Research Organization.).

Introduction and Overview

This report documents the process, methodology, and outcomes of the analysis of practice of physical therapy conducted from 2018 to 2022 by the Federation of State Boards of Physical Therapy (FSBPT). The primary aim of this study was to examine the current state of physical therapy practice in the U.S. and update the test materials for the National Physical Therapy Exam (NPTE) maintained by FSBPT. The study was carried out in partnership with the Human Resources Research Organization (HumRRO). HumRRO is a non-profit research and consulting firm dedicated to supporting quality testing and training programs that improve human, occupational, and organizational effectiveness.

The systematic process for determining the content of a licensure examination is commonly referred to as a *practice analysis.* Other names for this process include occupational analysis, job analysis, and role delineation study. This process begins with the identification of work requirements for entry-level practitioners and ends with the development of a formal set of test specifications, also known as a *test blueprint* or *test content outline*, that identifies the knowledge topics that will be included on the licensure examination.

Since the 1990s, FSBPT has completed practice analyses approximately every five years. These periodic analyses help ensure that changes in entry-level requirements are incorporated into the licensure examinations (e.g., fewer test questions are included that assess skill areas of decreasing importance and greater numbers of test questions address skill areas of increasing importance). Beginning in 2018, FSBPT modified its practice analysis methodology to increase the sensitivity of the analyses to changes in the practice of physical therapy. As described in the sections that follow, the notable adjustment to the approach was the administration of occupational surveys on an annual basis rather than a five-year basis.

This report describes the steps completed to conduct an analysis of entry-level practice for physical therapists (PT) and update the test blueprint for the NPTE-PT. Although the focus of this report is on the PT analysis of practice, some description of activities relevant to the physical therapist assistant (PTA) practice analysis is included because the methodology was identical and conducted concurrently. Complete results of the analysis of practice for PTAs are provided in a separate report.

Supporting Expert Groups

The physical therapy practice analysis was conducted with the help of multiple expert groups identified by FSBPT to play key roles in the process. These groups are described below.

PT Task Force

A 14-member PT Task Force was charged with reviewing the practice analysis results and adjusting the test specifications for the NPTE blueprint. As a group, the task force members had diverse professional backgrounds. For example, their primary practice settings included patients' homes, academic institutions, outpatient facilities, hospitals, skilled nursing facilities, long-term care facilities, and inpatient rehabilitation facilities. Their areas of expertise included orthopedics, musculoskeletal, geriatrics, pediatrics, lymphedema, neurologic, acute care, integumentary, wound care, cardiovascular and pulmonary, and sports physical therapy. The individual members of this group are listed in Appendix A.

Exam Committee Chairs

The NPTE exam committee chairs were tasked with reviewing the practice analysis survey results following each of the yearly administrations and making recommendations to update the survey for the following year. The exam committee chairs are practitioners who are responsible for overseeing the item construction and exam review processes for the NPTE-PT and have a deep understanding of the test development process and exam content.

Analysis of Practice

The methodological approach to update the NPTE test blueprint in 2022 was similar to approaches taken in prior years (Caramagno, Cogswell, & Waugh, 2016; Bradley, Caramagno, Waters, & Koch, 2011a; Bradley, Caramagno, Waters, & Koch, 2011b; Knapp, Russell, Bynum, & Waters, 2007a; Knapp, Russell, Bynum, & Waters, 2007b). For example, the practice analysis study involved occupational surveys and focus groups designed to (a) collect data from multiple subject matter experts and (b) use the survey results to inform decisions about the content and structure of the NPTE blueprints. However, unlike previous practice analysis studies that involved occupational surveys conducted only during the practice analysis study windows (i.e., approximately every five years), the current study involved a multi-year research cycle consisting of annual occupational surveys.

Table 1 illustrates the practice analysis methodology employed to update the NPTE content outlines and blueprint weighting schemes in 2022. Administration of the occupational surveys began in 2018 and continued each year through 2022. During the interim years (2018-2021), FSBPT, HumRRO, and the Exam Committee Chairs reviewed the survey results to identify trends and make decisions about item development activities (e.g., areas to begin or stop writing items). These parties also identified revisions to the surveys to improve the type and quality of data (e.g., adding demographic questions, revising or adding work activity statements). In 2022, the project team consolidated the data across years and conducted a 2-day, in-person workshop in June with the PT Task Force to (a) review the analysis results, (b) determine which work activities (WAs) and knowledge and skill requirements (KSRs) should be included in the NPTE content outlines, and (c) update the NPTE blueprint weights.

Table 1. Practice Analysis Methodology (2018-2022)

Year	Planning	Surveying	Reporting	Updating
	Design Data Collection Strategy	Update and Administer PT & PTA Surveys	Conduct Analyses and Summarize Results	Update the PT and PTA Test Content Outlines
2018	✓	✓	✓	
2019		✓	✓	
2020		✓	✓	
2021		✓	✓	
2022		✓	✓	✓

For each interim year of the practice analysis, HumRRO provided a results summary memo describing the survey process and outcomes, including documentation of changes made to the survey sections. We refer interested readers to the summary memos for details about the interim year results.[2] The remainder of this report focuses on the activities conducted in 2022 to update the NPTE content outlines and blueprint weighting schemes.

Occupational Survey Development

Structure and Format

The purpose of the occupational survey was to collect information from current job incumbents about the job tasks/duties performed by entry-level practitioners and the knowledge and skills that are necessary for competent entry-level practice—including any areas of practice that are emerging, changing, or becoming obsolete. HumRRO hosted the survey on its cloud-based platform—a secure, customizable environment for electronic survey administration.

The survey consisted of two main sections. The first section was a background questionnaire that included a set of questions about the demographic characteristics of the sample (e.g., education, employment, practice setting, patient population, gender, licensure year). The second section consisted of two components—a WA survey and a KSR survey. The WA survey included a list of statements describing tasks sometimes performed by entry-level practitioners and the KSR survey included statements describing knowledge or skills sometimes needed by entry-level practitioners on the job.

All respondents received the background questionnaire and were required to complete it before advancing to the second section. Assignments to the WA survey or the KSR survey were contingent upon the respondents' years of professional experience, using the year they passed the NPTE as a proxy. All individuals who passed the NPTE two years prior to the data collection period were assigned to the WA survey and individuals who passed the NPTE 5 or more years of earlier were eligible to respond to the KSR survey. Individuals between 3 and five years of experience were not invited to respond to the survey.

The content of the occupational survey administered in 2022 was based on the surveys used in the interim years of the study which, in turn, were based on surveys and research conducted in prior practice analysis studies. However, a few changes were made prior to the 2022 administration period to collect data on several areas of practice that are of interest to FSBPT. These changes are documented below.

- Added to the WA survey:
  - "Interpret each of the following types of data to determine the need for intervention or the response to intervention: Electrodiagnostic test results (e.g., electromyography, nerve conduction velocity)"
  - "Perform and/or train patient/client/caregiver in blood-flow restriction training"
  - "Perform and/or train patient/client/caregiver in cupping"

[2] See Caramagno (2018); Rogers and Caramagno (2019); Rogers and Caramagno (2020); and Harris, Rogers, and Caramagno (2021) for each of the full yearly memos.

- Added to the KSR survey:
  - "Applications, indications, contraindications, and precautions of blood-flow restriction training"
  - "Applications, indications, contraindications, and precautions of cupping"

The inclusion of these statements increased the length of the WA survey to 245 statements and the KSR survey to 156 statements. As in prior practice analysis studies, the project team separated each survey component into two forms composed of roughly equivalent numbers of statements (see Table 2). Each survey respondent was assigned to only one of these forms to encourage completion of the survey in a reasonable amount of time.

Table 2. Distribution of PT Work Activity and Knowledge and Skill Requirements Statements across Survey Forms (2022 Versions)

	Number of Statements	
	Form A	Form B
Work Activity Survey		
Information Gathering & Synthesis	12	
Systems Review	11	
Tests & Measures	62	
Evaluation & Diagnosis	27	
Procedural Interventions		81
Non-procedural Interventions		23
Patient/client & Staff Safety	9	20
Total	**121**	**124**
KSR Survey		
Cardiovascular/Pulmonary System	11	
Lymphatic System	10	
Musculoskeletal System	1	15
Neuromuscular & Nervous System		16
Integumentary System	11	
Metabolic & Endocrine Systems	1	7
Gastrointestinal System	1	10
Genitourinary System	1	10
System Interactions	7	
Equipment, Devices, & Technologies		3
Therapeutic Modalities	14	
Safety & Protection		5
Professional Responsibilities		13
Teaching & Learning Theories	3	
Research & Evidence-Based Practice	5	
Skills	12	
Total	**77**	**79**

Rating Scales

Respondents who completed the WA survey provided ratings of the importance of each work activity for safe and effective practice. The WA survey rating scale is shown below.

How important is it for *you* to perform this work activity to provide safe and effective care?

0. Not a part of my current role
1. Not important
2. Minimally important
3. Moderately important
4. Very important
5. Extremely important

Respondents who completed the KSR survey provided ratings of the importance of each knowledge or skill for safe and effective entry-level practice. The KSR survey rating scale is shown below.

How important is this knowledge or skill for *an entry-level* physical therapist to provide safe and effective care?

1. Not important
2. Minimally important
3. Moderately important
4. Very important
5. Extremely important

Survey Sampling and Administration

For each year of the study, FSBPT identified potential survey respondents from a list of licensure candidates who had passed the NPTE (and presumably later became licensed). This master list, maintained by FSBPT, contains names, email addresses, license type (PT or PTA) and number, NPTE passing date, and jurisdiction from which candidates applied. For the WA survey, all candidates who passed the NPTE two years prior to the survey were invited to respond. For the KSR survey, all candidates who passed the NPTE 5 or more years prior were assigned to one of five yearly response cohorts, stratified by year of initial licensure and initial licensing jurisdiction. This process ensures every licensed PT or PTA is invited to participate in the practice analysis over the five-year data collection period.

HumRRO prepared and managed the communication campaigns to distribute survey invitations to participants. Approximately two weeks before the launch of the surveys, FSBPT sent all participants a pre-invitation notification describing the purpose of the practice analysis. The pre-invitation notification was intended to alert the participants to the forthcoming survey invitation and prevent them from overlooking or deleting it. HumRRO conducted soft launches with small groups of participants (approximately 100) to test the communication campaign and survey functionality. After confirming the success of the soft launch, HumRRO sent invitations to the

remaining participants and the surveys remained open for approximately 2 months with reminders sent at 2-week intervals.

Data Cleaning and Screening

HumRRO took several steps to ensure the information analyzed and presented to the PT Task Force was representative of valid responses from the target population. This included filtering the raw response data based on ineligible employment statuses and excluding cases that exhibited missing and/or out-of-range responses. See Appendix C for a summary of the data quality screens. Results for all survey years are provided for comparison.

Response Rates and Final Analysis Sample

Table 3 summarizes the overall response rates from the practice analysis survey administrations by year. The "Usable" count displays the number of valid responses used in the analyses after screening out respondents flagged by the data quality screens. We note that response rates in 2022 were lower than previous years. This might be a function of the timing of the survey launch date (i.e., March 2022) which was a month earlier compared to previous years. However, we cannot rule out other possible factors including the impact of the coronavirus pandemic on the healthcare industry overall or latent characteristics of the randomly selected samples. Nevertheless, the total numbers of respondents for each form of the surveys were sufficient for the analyses.

Table 3. Survey Distribution and Response Rates

Survey/Year	Invited (*n*)	Responded (*n*)			Usable	
		Form A	Form B	Total	*n*	%
WA Survey						
2018	10,968	577	560	1,137	989	9.0
2019	11,133	1,025	955	1,980	1,640	14.7
2020	11,052	901	917	1,818	1,578	14.3
2021	11,528	567	554	1,121	896	7.8
2022	12,013	352	351	703	550	4.6
Total	**56,694**	**3,422**	**3,337**	**6,759**	**5,653**	**10.0**
KSR Survey*						
2018	20,064	311	313	624	564	2.8
2019	21,981	1,248	1,212	2,460	2,068	9.4
2020	24,026	1,156	1,166	2,322	2,000	8.3
2021	26,217	1,263	1,291	2,554	1,992	7.6
2022	28,425	548	583	1,131	900	3.2
Total	**120,713**	**4,526**	**4,565**	**9,091**	**7,524**	**6.2**

Note. *Each year, a small portion of PT KSR survey respondents were reassigned to the PTA KSR survey based on their responses to a background question focused on their experience supervising PTAs. That is, if the respondents indicated they routinely supervised PTAs and understood the knowledge and skills needed of safe and effective practice, they were reassigned to evaluate the PTA KSRs.

Data Analysis

Analysis of the WA and KSR survey data involved computing descriptive statistics to examine the distribution and magnitude of respondents' ratings as well as the change in importance ratings over time. Table 4 provides a summary and description of each metric we computed.

Table 4. Descriptive Statistics Summary

Statistic	Description
n	Sample size for the total number of survey respondents that provided any response
M	Average Importance. Ranges from 1.00 to 5.00.
SD	Standard Deviation of the *M.* Ranges from 0.00 to infinity. A low standard deviation (i.e., close to 0) indicates the values tend to be close to the mean, while a high standard deviation indicates the values are spread out over a wider range.
$\%_{Prf}$	Percent Perform (WA survey ONLY). The percentage of respondents that indicated the WA is a part of their current job.
$\%_{Imp}$	Percent Importance. The percentage of respondents that indicated the KSR or WA is important for safe and effective practice.
Slope	Slope of the linear regression line representing the change in average importance from 2018 to 2022.

Background Questionnaire Results

Overall, respondents self-identified as female (67-69%), white (72-75%), educated at the master's degree level (or higher) in Physical Therapy (88-91%), and employed full-time (72-88%). Not surprisingly, there were differences between the WA and KSR survey samples attributable to respondents' experience level (i.e., entry-level versus experienced). For example, a larger portion of entry-level PTs (88%) indicated their highest educational degree is a Doctor of Physical Therapy (DPT)—compared to 67% of the more experienced PTs—which is consistent with changes to the minimum educational requirement for PTs. There were fewer entry-level PTs working part-time compared to their more experienced counterparts (6% versus 17%, respectively). On average, experienced PTs reported spending a greater portion of their time in home care settings compared to entry-level PTs (12% versus 4%). In contrast, entry-level PTs reported spending more time, on average, in outpatient facilities (34% versus 24%).

These demographic and background characteristics are consistent across the survey samples and administration years. However, because there is no complete description of the entire population of physical therapists, we cannot make conclusive arguments about the true representativeness of the sample.

Work Activity Survey Results

The sample sizes of respondents who provided valid responses for the 245 WAs ranged from 222 to 2,897. WAs with smaller sample sizes were those that were introduced to the survey in 2021 or 2022. The average sample size was 2,530. Mean importance ratings ranged from 1.87 to 4.82 (average $M = 3.71$; average $SD = 1.03$). The percentage of respondents who indicated they perform the WAs ranged from 31% to 100% with an average of 88%. The percentage of respondents who rated the WAs as important (i.e., a rating of 2 or higher) ranged from 14% to 100%, with an average of 82%.

Of the 245 WAs included in the analysis, most (*n* = 230, 94%) are performed by at least half of the respondents and a large portion (*n* = 217, 86%) are viewed as important for entry-level practitioners to provide safe and effective care (i.e., importance rating of 2 or higher). These results are not surprising given the rigor and maturity of the practice analysis methodology. None of the WAs exhibited noteworthy trends over the past five years (i.e., the magnitudes of the slope values were small), although some slopes were statistically significant simply due to large sample sizes. Across all WAs, the slopes ranged from -0.12 to 0.06. The average slope was -0.006 indicating that, for every year of the practice analysis, the mean importance ratings decreased by less than 1/20th of a scale point.

To aid in the interpretation of the results, we established an empirical decision rule pertaining to the rating scales mentioned above. The empirical decision rule is a numeric value representing a *Criticality Threshold* for making decisions about which WA statements warrant further examination by the PT Task Force. Conceptually, the value—mean importance rating of 2.50—represents the midpoint between scale point 2 (Minimally Important) and scale point 3 (Moderately Important). Using this criticality threshold as our guide, we identified 16 WAs that had mean importance ratings at or below 2.50 and an additional 32 WAs that had mean importance ratings between 2.50 and 3.00. These WAs are displayed in Table 5. Full results are presented in Appendix E.

Table 5. PT Work Activities Near the Criticality Threshold

PT WAs	*n*	*M*	*SD*	%$_{Prf}$	%$_{Imp}$
Perform and/or train patient/client/caregiver in desensitization techniques (e.g., brushing, tapping, use of textures)	2,607	2.99	1.13	76.5	68.4
Perform screen of the gastrointestinal system (e.g., difficulty swallowing, nausea, change in appetite/diet, change in bowel function)	2,688	2.97	1.08	90.6	83.9
Perform and/or train patient/client/caregiver in hydrotherapy (e.g., aquatic exercise, underwater treadmill)	2,575	2.92	1.34	54.2	39.9
Apply taping for neuromuscular reeducation	2,726	2.91	1.19	88.0	77.0
Perform dry needling	2,788	2.90	1.41	44.6	33.4
Select and perform tests and measures of superficial reflexes and reactions (e.g., cremasteric reflex, abdominal reflexes)	2,370	2.89	1.32	87.5	71.9
Interpret each of the following types of data to determine the need for intervention or the response to intervention: Electrodiagnostic test results (e.g., electromyography, nerve conduction velocity)	222	2.89	1.26	98.2	65.8
Select and perform tests and measures of visceral organ sensitivity and integrity (e.g., palpation, auscultation)	2,370	2.84	1.24	84.4	70.6
Perform and/or train patient/client/caregiver in manual/mechanical airway clearance techniques (e.g., assistive devices, assistive cough, incentive spirometer, flutter valve, percussion, vibration)	2,896	2.84	1.26	60.8	51.2
Apply taping for pain management	2,726	2.82	1.20	83.9	71.7
Interpret each of the following types of data to determine the need for intervention or the response to intervention: Anthropometric	2,360	2.80	1.11	89.3	78.4

Table 5. (Continued)

PT WAs	*n*	*M*	*SD*	%Prf	%Imp
Perform and/or train patient/client/caregiver in mechanical spinal traction	2,555	2.77	1.25	67.3	52.2
Perform cervical spinal manipulation (thrust)	2,761	2.76	1.38	67.2	51.0
Perform and/or train patient/client/caregiver in intermittent pneumatic compression	2,555	2.75	1.28	54.4	39.2
Perform and/or train patient/client/caregiver in blood-flow restriction training	253	2.75	1.27	95.5	38.3
Perform and/or train patient/client/caregiver in genitourinary management (e.g., pelvic floor exercises, bladder strategies)	2,896	2.73	1.25	63.9	53.4
Interpret each of the following types of data to determine the need for intervention or the response to intervention: Gastrointestinal system	2,360	2.73	1.08	87.6	76.7
Interpret each of the following types of data to determine the need for intervention or the response to intervention: Genitourinary system	2,360	2.72	1.10	87.0	75.2
Select and perform tests and measures of body dimensions (e.g., height, weight, girth, limb length, head circumference/shape)	2,624	2.70	1.12	92.4	80.3
Perform and/or train patient/client/caregiver in assisted movement devices (e.g., dynamic splint, continuous passive motion devices)	2,555	2.69	1.23	66.6	51.4
Perform and/or train patient/client/caregiver in application of topical agents (e.g., cleansers, creams, moisturizers, ointments, sealants) and dressings (e.g., hydrogels, wound coverings)	2,607	2.68	1.27	45.9	32.0
Perform and/or train patient/client/caregiver in gastrointestinal management (e.g., bowel strategies, positioning to avoid reflux)	2,896	2.61	1.21	63.4	51.9
Perform manual lymphatic drainage	2,788	2.61	1.22	49.4	38.2
Select and perform tests and measures of oral motor function, phonation, and speech production	2,387	2.61	1.21	68.7	51.7
Recommend topical agents (e.g., pharmacological to physician, over-the-counter to patient) and advanced wound dressings (e.g., negative pressure wound therapy, wound coverings)	2,607	2.59	1.27	42.9	28.1
Select and perform tests and measures of body composition (e.g., percent body fat, lean muscle mass)	2,624	2.55	1.11	87.6	72.2
Select and perform tests and measures of electrophysiological function using surface electrodes (e.g., surface EMG)	2,387	2.54	1.29	68.2	47.1
Perform and/or train patient/client/caregiver in nonselective debridement (e.g., removal of nonselective areas of devitalized tissue)	2,607	2.53	1.34	36.1	20.6
Perform and/or train patient/client/caregiver in cupping	253	2.51	1.17	95.9	40.7

Table 5. (Continued)

PT WAs	*n*	*M*	*SD*	%Prf	%Imp
Perform and/or train patient/client/caregiver in selective enzymatic or autolytic debridement (e.g., removal of specific areas of devitalized tissue)	2,607	2.51	1.36	34.8	19.0
Perform and/or train patient/client/caregiver in postural drainage	1,576	2.51	1.25	73.4	38.8
Perform screen of the reproductive system (e.g., sexual and/or menstrual dysfunction, menopause status)	2,688	2.51	1.12	83.1	67.7
Select and perform tests and measures of muscle integrity (e.g., ultrasound imaging)	2,387	2.49	1.31	63.3	41.4
Apply taping for lymphatic drainage*	2,727	2.47	1.17	54.8	40.0
Perform sharp debridement (e.g., removal of specific areas of devitalized tissue)	2,607	2.43	1.34	34.3	18.0
Perform and/or train patient/client/caregiver in negative pressure wound therapy (e.g., vacuum-assisted wound closure)	2,607	2.42	1.29	34.7	18.9
Perform and/or train patient/client/caregiver in hydrotherapy using contrast baths/pools	2,575	2.39	1.33	52.6	31.0
Perform and/or train patient/client/caregiver in ultrasound procedures	2,562	2.38	1.30	72.2	46.8
Perform and/or train patient/client/caregiver in paraffin bath thermotherapy	2,562	2.35	1.27	53.3	32.1
Perform and/or train patient/client/caregiver in iontophoresis	2,575	2.31	1.21	63.0	40.5
Select and perform tests and measures of electrophysiological function using needle insertion (e.g., nerve conduction)	2,387	2.30	1.25	61.6	37.2
Perform and/or train patient/client/caregiver in hyperbaric therapy	2,607	2.18	1.22	31.1	14.1
Perform and/or train patient/client/caregiver in phototherapy (laser light)	2,575	2.10	1.25	46.3	22.3
Perform and/or train patient/client/caregiver in phonophoresis	2,562	2.05	1.25	46.9	21.4
Perform and/or train patient/client/caregiver in dry heat thermotherapy (e.g., Fluidotherapy)	2,562	1.97	1.17	46.6	20.6
Perform and/or train patient/client/caregiver in diathermy	2,562	1.91	1.21	44.7	17.5
Perform and/or train patient/client/caregiver in shockwave therapy	2,562	1.88	1.19	39.9	14.6
Perform and/or train patient/client/caregiver in monochromatic infrared agent procedures (e.g., light emitting diodes [LEDs])	2,562	1.87	1.14	39.6	15.0

*Note. * The PT Task Force recommended changing this WA to "Apply taping for edema management".*

Knowledge and Skill Requirements Survey Results

Across the 156 KSRs included in the analyses, sample sizes ranged from 380 to 3,833. KSRs with smaller sample sizes were those that were recently introduced to the survey in 2021 or 2022. The average sample size was 3,363. Mean importance ratings ranged from 2.30 to 4.82 (average *M* = 3.83; average *SD* = 0.90). The percentage of respondents who rated the KSRs as important (i.e., a rating of 2 or higher) ranged from 69% to 100%, with an average of 97%. All 156 KSRs included in the analysis were rated important by more than half of the respondent samples.

None of the KSRs exhibited noteworthy trends over the past five years (i.e., all slopes were small in magnitude), although, similar to the WAs, some slopes were statistically significant simply due to large sample sizes. The average slope was 0.003 and, across all KSRs, the slopes ranged from -0.08 to 0.11.

We used the same empirical decision rule for the KSRs as we did for the WAs to establish a criticality threshold to aid in the interpretation. Using this criticality threshold as our guide, we identified four KSRs that had mean importance ratings at or below 2.50 and an additional 13 KSRs that had mean importance ratings between 2.50 and 3.00. These KSRs are displayed in Table 6. Full results are presented in Appendix F.

Table 6. PT Knowledge and Skills Requirements Near the Criticality Threshold

PT KSRs	*n*	*M*	*SD*	$\%_{Imp}$
Gastrointestinal system tests/measures, including outcome measures, and their applications according to current best evidence (e.g., bowel dysfunction impact questionnaires, Murphy test, Rovsing test, McBurney point sign)	3,369	3.00	1.04	94.0
The impact of regenerative medicine (e.g., platelet rich plasma, stem cells) on physical therapy prognosis and interventions related to the neuromuscular and nervous systems	2,326	2.99	1.02	94.2
Non-pharmacological medical management of the lymphatic system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,539	2.98	0.97	95.4
Applications, indications, contraindications, and precautions of blood-flow restriction training	380	2.97	1.28	87.1
The impact of pharmacology used to treat the genitourinary system on physical therapy management	3,328	2.89	1.03	92.5
Non-pharmacological medical management of the gastrointestinal system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,369	2.87	0.98	94.2
Non-pharmacological medical management of the genitourinary system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,328	2.80	1.00	92.0
Applications, indications, contraindications, and precautions of laser light therapy	3,269	2.79	1.24	83.7
Physical therapy ultrasound imaging of the musculoskeletal system	3,833	2.74	1.09	87.5
Applications, indications, contraindications, and precautions of LED light therapy	3,269	2.73	1.24	82.0
Applications, indications, contraindications, and precautions of cupping	380	2.71	1.20	84.5

Table 6. (Continued)

PT KSRs	*n*	*M*	*SD*	$\%_{Imp}$
Applications, indications, contraindications, and precautions of phonophoresis	3,269	2.69	1.27	80.4
Diagnostic electromyography (EMG) using surface electrodes	3,571	2.59	1.01	86.6
Diagnostic electrophysiology (EMG/NCV) using needle insertion	3,571	2.44	1.03	81.7
Physical therapy ultrasound imaging of the genitourinary system	3,328	2.43	1.03	80.5
Applications, indications, contraindications, and precautions of diathermy	3,265	2.41	1.27	69.8
Applications, indications, contraindications, and precautions of shockwave therapy	3,265	2.30	1.19	69.4

Interrater Consistency and Agreement

Two types of intraclass correlation coefficients (ICCs; McGraw & Wong, 1996; Shrout & Fleiss, 1979) were computed to estimate the degree of consistency and agreement among the survey respondents. In this context, *consistency* refers to the similarity of the pattern of ratings among the respondents (e.g., Task X is more important than Task Y and less important than Task Z). *Agreement* indicates the extent to which the respondents' ratings are exactly the same (e.g., Rater A and Rater B rated Task X as Extremely Important). Thus, agreement estimates are more stringent, requiring exact agreement across respondents.

Consistency and agreement ICCs estimated for a single rater (1-Rater) and for the average number of raters (Observed) are reported in Table 7. The single rater estimates can be interpreted as the level of consistency (or agreement) to be expected between the ratings provided by any single rater with any other randomly selected single rater. The Observed estimates indicate the degree of consistency (or agreement) to be expected between the average among the sample of survey participants and the average that would be obtained if another random sample were to be drawn from the population. In other words, if the study were repeated with another set of similarly sized samples, there is a strong expectation that the same results would be obtained. Because all the Observed estimates are equal to or greater than 0.94 (after rounding to two decimal places), it can be concluded the data are highly consistent across raters.

Table 7. Estimates of Inter-rater Reliability and Agreement

Rating Scale/Exam Category	Number of Items	Type of ICC			
		Consistency		Agreement	
		1-Rater	Observed	1-Rater	Observed
WA Importance					
Form A	121	0.26	0.98	0.18	0.96
Form B	124	0.21	0.97	0.11	0.94
KSR Importance					
Form A	75	0.31	0.97	0.22	0.96
Form B	78	0.35	0.98	0.22	0.96

Note. Consistency *and agreement ICCs estimated for a single rater (1-Rater) and for the total number of raters (Observed).*

Task Force Review and Establishment of Test Blueprints

In June 2022, FSBPT and HumRRO facilitated a 2-day, in-person workshop with the PT Task Force to review the survey results and update the content outline for the licensure exam. Because the surveys included an "oversampling" of WAs and KSRs that might be required of entry-level PTs, a principal goal of the workshop was to identify which (if any) WAs and KSRs should be omitted from the content outline. The review process is described in more detail below.

First, the PT Task Force reviewed the background questionnaire results to gain a general understanding of the demographic make-up of the samples. The meeting facilitators asked the task force members to consider the following questions as they reviewed the results.

- Are the results consistent with your observations and experience?
- Are there any unexpected results that might skew the WA or KSR ratings data?
- Are the samples (generally) representative of the overall population of PTs?

Overall, the PT Task Force believed the characteristics reported by survey respondents accurately reflected the distribution of those characteristics in the practitioner population. The task force members also provided a few suggested revisions to the background questions and response options to improve clarity and accuracy.

Next, the PT Task Force reviewed the WA and KSR survey results. For both results sets, the meeting facilitators instructed the task force members to consider which statements should be omitted from the NPTE content outline and what impact the omission might have for WAs and KSRs that are conceptually related. That is, if the PT Task Force elected to omit a WA, the meeting facilitators asked them to consider whether any related WAs or KSRs should also be omitted. The meeting facilitators provided the following criteria for determining whether a WA or KSRs qualified for omission.

- Mean importance below the Criticality Threshold and NOT trending up
- Mean importance at or slightly above Criticality Threshold and trending down
- NOT entry-level
- Specialized practice

Given the maturity of the content outline and the stability of the survey results over the past 5 years, the PT Task Force spent most of the time reviewing the WAs and KSRs that exhibited mean importance ratings near the criticality threshold. However, we encouraged task force members to voice their concerns or questions about any of the WAs or KSRs.

The PT Task Force identified 229 WAs (93%) as critical for entry-level PT practice. Of these, 27 WAs were considered "borderline" (i.e., mean importance ratings between 2.50 and 3.00) and six exhibited mean importance ratings below the criticality threshold. The PT Task Force elected to retain these WAs because (a) they are required for safe and effective entry-level practice, (b) failure to perform them correctly could lead to an increased risk for patient harm, and/or (c) the survey results provide sufficient evidence of their importance. The task force members identified 16 WAs as not critical or not relevant to entry-level PT practice. These WAs are displayed in Table 8.

Table 8. PT Work Activities Selected for Omission from the NPTE Content Outline

PT WAs	Rationale for Omission
Perform dry needling	Survey data are not compelling enough to include. Continue to track.
Perform spinal mobilization/manipulation (thrust)	Redundant with two other work activities related to the performance of cervical spinal, lumbar, and thoracic manipulation (thrust).
Perform and/or train patient/client/caregiver in blood-flow restriction training	Insufficient data to support inclusion on NPTE. Continue to track.
Select and perform tests and measures of oral motor function, phonation, and speech production	Limited PT-related tests and measures and not entry-level.
Select and perform tests and measures of electrophysiological function using surface electrodes (e.g., surface EMG)	Survey data are not compelling enough to include. Continue to track.
Perform and/or train patient/client/caregiver in cupping	Insufficient data to support inclusion on NPTE. Continue to track.
Select and perform tests and measures of muscle integrity (e.g., ultrasound imaging)	Survey data are not compelling enough to include. Continue to track.
Perform and/or train patient/client/caregiver in paraffin bath thermotherapy	Survey data are not compelling enough to include. Continue to track.
Select and perform tests and measures of electrophysiological function using needle insertion (e.g., nerve conduction)	Not entry-level.
Perform and/or train patient/client/caregiver in hyperbaric therapy	Survey data are not compelling enough to include. Continue to track.
Perform and/or train patient/client/caregiver in phototherapy (laser light)	Survey data are not compelling enough to include. Dependent on equipment availability. Continue to track.
Perform and/or train patient/client/caregiver in phonophoresis	Not used in clinical practice. Low mean importance rating.
Perform and/or train patient/client/caregiver in hydrotherapy using contrast baths/pools	Survey data are not compelling enough to include. Continue to track.
Perform and/or train patient/client/caregiver in dry heat thermotherapy (e.g., Fluidotherapy)	Survey data are not compelling enough to include. Continue to track.
Perform and/or train patient/client/caregiver in diathermy	Survey data are not compelling enough to include. Continue to track.
Perform and/or train patient/client/caregiver in shockwave therapy	Survey data are not compelling enough to include. Continue to track.
Perform and/or train patient/client/caregiver in monochromatic infrared agent procedures (e.g., light emitting diodes [LEDs])	Survey data are not compelling enough to include. Dependent on equipment availability. Continue to track.

The PT Task Force identified 130 KSRs (83%) as critical for entry-level PT practice. Of these, six KSRs were considered “borderline” (i.e., mean importance ratings between 2.50 and 3.00). The PT Task Force elected to retain these KSRs because their importance ratings exceeded the criticality threshold by at least a quarter of a scale point (i.e., *M*s ranged from 2.80 to 3.00 after rounding). The task force members identified 26 KSRs as (a) not critical or not relevant to entry-level PT practice or (b) attributes that cannot be effectively measured by a written exam. These KSRs are displayed in Table 9. The final lists of WAs and KSRs included in the NPTE content outline can be found in Appendix G and H, respectively.

Table 9. PT Knowledge and Skill Requirements Selected for Omission from the NPTE Content Outline

PT KSRs	Rationale for Exclusion
Physical therapy ultrasound imaging of the musculoskeletal system	Not entry-level. Continue to track.
Diagnostic electromyography (EMG) using surface electrodes	Related WAs were omitted. Not entry-level. Survey data not compelling enough to include.
Diagnostic electrophysiology (EMG/NCV) using needle insertion	Survey data not compelling enough to include.
Physical therapy ultrasound imaging of the genitourinary system	Not widely taught. Not entry-level.
Applications, indications, contraindications, and precautions of laser light therapy	Related WAs were omitted.
Applications, indications, contraindications, and precautions of LED light therapy	Related WAs were omitted.
Applications, indications, contraindications, and precautions of phonophoresis	Related WAs were omitted.
Applications, indications, contraindications, and precautions of diathermy	Related WAs were omitted.
Applications, indications, contraindications, and precautions of shockwave therapy	Related WAs were omitted.
Applications, indications, contraindications, and precautions of blood-flow restriction training	Insufficient data to support inclusion on NPTE. Continue to track.
Applications, indications, contraindications, and precautions of cupping	Insufficient data to support inclusion on NPTE. Continue to track.
Teaching and learning theories and techniques	The knowledge is encompassed by multiple knowledge areas that are included throughout the content outline and it does not require a stand-alone statement.
Health behavior change models (e.g., social cognitive theory, health belief model)	The knowledge is encompassed by multiple knowledge areas that are included throughout the content outline and it does not require a stand-alone statement.
Communication methods and techniques (e.g., motivational interviewing, health information brochures/handouts, feedback techniques)	The knowledge is encompassed by multiple knowledge areas that are included throughout the content outline and it does not require a stand-alone statement.
Active listening - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times	Important for entry-level practice but not easily assessed via multiple-choice question format.
Speaking - Talking to others to convey information effectively	Important for entry-level practice but not easily assessed via multiple-choice question format.
Reading comprehension - Understanding written sentences and paragraphs in work related documents	Important for entry-level practice but not easily assessed via multiple-choice question format.
Critical thinking - Using logic and clinical reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems	Important for entry-level practice but not easily assessed via multiple-choice question format.
Social perceptiveness - Being aware of others' reactions and understanding why they react as they do	Important for entry-level practice but not easily assessed via multiple-choice question format.

Table 9. (Continued)

PT KSRs	Rationale for Exclusion
Time management - Managing one's own time and the time of others	Important for entry-level practice but not easily assessed via multiple-choice question format.
Coordination - Adjusting actions in relation to others' actions	Important for entry-level practice but not easily assessed via multiple-choice question format.
Writing - Communicating effectively in writing as appropriate for the needs of the audience	Important for entry-level practice but not easily assessed via multiple-choice question format.
Active learning - Understanding the implications of new information for both current and future problem solving and decision-making	Important for entry-level practice but not easily assessed via multiple-choice question format.
Persuasion - Persuading others to change their minds or behavior	Important for entry-level practice but not easily assessed via multiple-choice question format.
Negotiation - Bringing others together and trying to reconcile differences	Important for entry-level practice but not easily assessed via multiple-choice question format.
Service orientation - Actively looking for ways to help people	Important for entry-level practice but not easily assessed via multiple-choice question format.

Final Test Blueprint Categories and Weights

The final activity of the workshop was to establish new content weights for the NPTE blueprint. The task force members independently assigned a percentage value for each principal content domain on the blueprint. Content domains include the eight body systems, System Interactions, Equipment, Devices, & Technologies, Therapeutic Modalities, Safety & Protection, Professional Responsibilities, and Research & Evidence-Based Practice. When making their judgments, the task force members considered the following pieces of information.

- Demographic questionnaire results
- The type, number, and variety of WAs retained by the Task Force
- The depth and breadth of knowledge associated with the KSRs retained by the Task Force
- The number of KSRs within each content domain
- Their own experience and knowledge of the profession
- The percentages and numbers of items assigned in the previous content outline

Next, the Task Force followed a similar process to assign percentages to the secondary domains within each body system (i.e., Physical Therapy Examination; Foundations for Evaluation, Differential Diagnosis and Prognosis; and Interventions).

For both levels of analysis, the task force members entered their percentage values into a cloud-based spreadsheet that computed the approximate numbers of items for each principal and secondary domain. The meeting facilitators projected the spreadsheet on a screen and engaged the PT Task Force in a discussion of the results. During the discussion, the facilitators encouraged the task force members to provide rationales for their assigned percentages. The focus of this step was primarily to allow the task force members to share ideas and perspective, uncover biases or differences in judgment, and (generally) strive to reach consensus, although it was not a mandate.

Once the discussion was complete, the task force members performed a second round of judgments to evaluate their initial percentages—considering insights gained during the group discussion—and adjust them up or down, as warranted. The averages of the second round of percentages provided by the PT Task Force represent the recommended new NPTE blueprint weights (see Table 10). These weights will be reviewed by FSBPT and its Board of Directors and considered for adoption. Table 10 includes weights adopted in prior practice analysis cycles for comparison.

Table 10. Comparison of New and Historical PT Test Blueprint Weights

Content Domain	2013-2017	2018-2023	2024-2027
	%*	%	%
CARDIOVASCULAR/PULMONARY SYSTEM	**17.0**	**13.0**	**13.6**
Physical Therapy Examination	28.0	30.8	30.2
Foundations for Evaluation, Differential Diagnosis and Prognosis	32.0	34.6	33.9
Interventions	40.0	34.6	35.9
LYMPHATIC SYSTEM**	**--**	**3.0**	**3.0**
Physical Therapy Examination	--	16.7	22.2
Foundations for Evaluation, Differential Diagnosis and Prognosis	--	33.3	34.0
Interventions	--	50.0	43.8
MUSCULOSKELETAL SYSTEM	**31.0**	**27.5**	**27.5**
Physical Therapy Examination	33.0	34.5	32.5
Foundations for Evaluation, Differential Diagnosis and Prognosis	28.0	34.5	33.6
Interventions	38.0	30.9	33.9
NEUROMUSCULAR & NERVOUS SYSTEM	**25.0**	**23.5**	**24.5**
Physical Therapy Examination	27.0	34.0	33.2
Foundations for Evaluation, Differential Diagnosis and Prognosis	30.0	31.9	33.0
Interventions	42.0	34.0	33.8
INTEGUMENTARY SYSTEM	**5.0**	**5.5**	**5.3**
Physical Therapy Examination	29.0	27.3	29.0
Foundations for Evaluation, Differential Diagnosis and Prognosis	29.0	36.4	33.1
Interventions	43.0	36.4	37.9
METABOLIC & ENDOCRINE SYSTEMS	**4.0**	**3.5**	**2.8**
Foundations for Evaluation, Differential Diagnosis and Prognosis	67.0	57.1	56.4
Interventions	33.0	42.9	43.6
GASTROINTESTINAL SYSTEM	**2.0**	**2.5**	**2.3**
Physical Therapy Examination	0.0	20.0	26.8
Foundations for Evaluation, Differential Diagnosis and Prognosis	50.0	40.0	43.3
Interventions	50.0	40.0	29.8
GENITOURINARY SYSTEM	**2.0**	**3.0**	**2.4**
Physical Therapy Examination	25.0	20.0	24.1
Foundations for Evaluation, Differential Diagnosis and Prognosis	50.0	40.0	41.2
Interventions	25.0	40.0	34.7
SYSTEM INTERACTIONS	**4.0**	**5.0**	**4.9**
EQUIPMENT, DEVICES, & TECHNOLOGIES	**3.0**	**3.0**	**3.1**
THERAPEUTIC MODALITIES	**4.0**	**3.5**	**2.9**
SAFETY & PROTECTION	**3.0**	**3.0**	**3.2**
PROFESSIONAL RESPONSIBILITIES	**2.0**	**2.5**	**2.5**
RESEARCH & EVIDENCE-BASED PRACTICE	**2.0**	**2.0**	**2.1**

Note. * All domain level percentage values are based on the total test form length of 200 items. **Prior to 2017, Lymphatic System was combined with Cardiovascular/Pulmonary System. The exact number of items that measured knowledge of the Lymphatic System is not known.

Summary and Final Remarks

The analysis of practice described in this report represents a rigorous, systematic assessment of the entry-level requirements for PTs. The resulting NPTE content outline and test blueprint weights reflect careful adjustments based on the input of thousands of practitioners working in the field and the expert judgments of the PT practice analysis task force members. Based on the analysis of 5 years of data, the general organizing framework of the content outline will be carried forward and the coverage of most content areas will change by one percentage point or less. The largest change will be a one percent increase in coverage of the neuromuscular and nervous system.

Although at face value these adjustments might seem small, they reflect shifts in the distribution of the exam content based on meaningful changes in the practice of physical therapy. These changes represent the profession's adaptation to a continuously evolving environmental, social, political, and regulatory landscape—one that entry-level practitioners must navigate as they strive to provide safe and effective care for their patient populations. In the years to come, FSBPT will continue evaluating the work activities, knowledge, and skills required of entry-level practitioners to maintain the content outlines and NPTE item banks and identify emerging areas of practice that should be included in future practice analysis studies.

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Appendix A. Practice Analysis Task Force Members

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- Geevar Varghese, PT
- Molly Watkins, PT
- Korry Wheeler, PT

Appendix B. Survey Invitation Letter

Example Survey Invitation Letter for PT KSR Survey in 2022
Subject Line:

Help Determine Physical Therapy Competency Standards

Email body:

The Federation of State Boards of Physical Therapy (FSBPT) invites you to complete a survey of physical therapy practice. The survey results will provide the basis for developing the test content outlines for the National Physical Therapy Examination (NPTE). Your input will help define the knowledge and skills required by entry-level PTs to provide safe and effective care. To thank you for completing this survey, the Federation of State Boards of Physical Therapy will enter you into a drawing for 1 of 10 Amazon gift cards valued at $100.

Please complete the survey by midnight (12:00 AM EST) April 29, 2022. The information you provide is confidential and your individual responses will not be made public.

To access the survey, click the link below, or copy and paste the link into the navigation bar of your web browser.

[Inserted customized URL for each recipient]

Subject Description:

The Federation of State Boards of Physical Therapy (FSBPT) invites you to complete a survey of physical therapy practice.

Sample Information:

You are receiving this email because you completed the NPTE to practice as a physical therapist or physical therapist assistant.

Appendix C. Data Screening Summary

Data Screen	2018	2019	2020	2021	2022	Total
WA Survey						
Flat Responding	37	56	35	35	26	189
Hasty Responding	7	10	10	9	6	42
Missing >90% of responses	99	267	186	178	122	852
Employment Status	0	0	0	0	0	0
Retired	0	0	0	0	0	0
Unemployed and *not* looking for work as a PT or PTA	12	17	15	8	10	62
Total	*148*	*340*	*240*	*225*	*153*	*1,106*
KSR Survey						
Flat Responding	6	103	90	97	59	355
Hasty Responding	0	13	15	10	2	40
Missing >90% of responses	34	227	168	385	138	952
Employment Status	0	0	0	0	0	0
Retired	2	13	8	7	5	35
Unemployed and *not* looking for work as a PT or PTA	21	62	60	90	37	270
Total	*50*	*392*	*322*	*562*	*231*	*1,557*

Note. Respondent cases could be flagged for multiple reasons depending on individual responses and/or response patterns. The values in the Total rows indicate the total numbers of respondent cases screened out of the analysis in each year and do not reflect a sum of the values in the preceding rows.

Appendix D. Demographic Questionnaire Results (2018 to 2022)

	n		%	
	PT KSR	PT WA	PT KSR	PT WA
Q1 What is your gender?				
I prefer not to respond	123	46	1.6	< 1
Female	5,180	3,794	68.8	67.1
Male	1,965	1,602	26.1	28.3
[other]	6	5	< 1	< 1
Q2 Are you Hispanic or Latino?				
I prefer not to respond	213	93	2.8	1.6
Yes	311	306	4.1	5.4
No	6,822	5,130	90.7	90.7
Q3 What is your race? Select all that apply				
I prefer not to respond	352	151	4.7	2.7
American Indian or Alaska Native	41	33	< 1	< 1
Asian	1,303	959	17.3	17.0
Black or African American	210	160	2.8	2.8
Native Hawaiian or Other Pacific Islander	43	42	< 1	< 1
White	5,434	4,246	72.2	75.1
[other]	143	128	1.9	2.3
Q4 What is the highest academic degree related to physical therapy that you have earned?				
Certificate	3	0	< 1	< 1
Associate's	0	0	< 1	< 1
Bachelor's	763	365	10.1	6.5
Master's	1,414	210	18.8	3.7
Doctor of Physical Therapy (DPT)	5,073	4,953	67.4	87.6
Doctoral degree (PhD, EdD, clinical doctorate, or other)	108	24	1.4	< 1
[other]	67	35	< 1	< 1
Q5 Where did you complete your entry-level physical therapy education?				
United States	6,227	4,852	82.8	85.8
Canada	28	14	< 1	< 1
Egypt	20	23	< 1	< 1
India	284	198	3.8	3.5
Philippines	699	360	9.3	6.4
South Korea	15	18	< 1	< 1
United Kingdom	29	7	< 1	< 1
[other]	144	118	1.9	2.1

	n		%	
	PT KSR	PT WA	PT KSR	PT WA
Q6 In what year were you FIRST licensed as a physical therapist in the United States, the District of Columbia, U.S. Virgin Islands, or Puerto Rico?				
Not selected	8	9	< 1	< 1
1955-1959	0	0	< 1	< 1
1960-1969	0	0	< 1	< 1
1970-1979	2	0	< 1	< 1
1980-1989	17	3	< 1	< 1
1990-1999	920	4	12.2	< 1
2000-2009	2,963	0	39.4	< 1
2010-2019	3,613	5,075	48.0	89.8
2020-2022	1	562	< 1	9.9
Q7 In which one of the following United States physical therapy jurisdictions do you currently have your PRIMARY clinical work setting?				
Not selected	50	77	< 1	1.4
Alabama	52	56	< 1	< 1
Alaska	31	24	< 1	< 1
Arizona	144	125	1.9	2.2
Arkansas	71	44	< 1	< 1
California	595	503	7.9	8.9
Colorado	151	138	2.0	2.4
Connecticut	83	95	1.1	1.7
District of Columbia (Washington)	44	28	< 1	< 1
Delaware	44	28	< 1	< 1
Florida	257	198	3.4	3.5
Georgia	207	154	2.8	2.7
Guam	7	0	< 1	< 1
Hawaii	61	22	< 1	< 1
Idaho	43	41	< 1	< 1
Illinois	329	236	4.4	4.2
Indiana	188	125	2.5	2.2
Iowa	51	51	< 1	< 1
Kansas	48	57	< 1	1.0
Kentucky	75	76	< 1	1.3
Louisiana	95	44	1.3	< 1
Maine	42	29	< 1	< 1
Maryland	193	127	2.6	2.2
Massachusetts	168	171	2.2	3.0
Michigan	209	123	2.8	2.2
Minnesota	163	146	2.2	2.6
Mississippi	46	33	< 1	< 1
Missouri	111	110	1.5	1.9

	n		%	
	PT KSR	PT WA	PT KSR	PT WA
Montana	41	19	< 1	< 1
Nebraska	53	38	< 1	< 1
Nevada	59	57	< 1	1.0
New Hampshire	86	33	1.1	< 1
New Jersey	569	208	7.6	3.7
New Mexico	41	33	< 1	< 1
New York	566	546	7.5	9.7
North Carolina	176	164	2.3	2.9
North Dakota	30	28	< 1	< 1
Northern Mariana Islands	1	1	< 1	< 1
Ohio	182	157	2.4	2.8
Oklahoma	35	44	< 1	< 1
Oregon	129	92	1.7	1.6
Pennsylvania	299	255	4.0	4.5
Puerto Rico	0	5	< 1	< 1
Rhode Island	27	16	< 1	< 1
South Carolina	152	87	2.0	1.5
South Dakota	21	10	< 1	< 1
Tennessee	114	89	1.5	1.6
Texas	615	344	8.2	6.1
U.S. Virgin Islands	2	2	< 1	< 1
Utah	57	49	< 1	< 1
Vermont	17	12	< 1	< 1
Virginia	242	148	3.2	2.6
Washington	172	127	2.3	2.2
West Virginia	24	18	< 1	< 1
Wisconsin	120	131	1.6	2.3
Wyoming	22	15	< 1	< 1
Q8 In which of the following United States physical therapy jurisdictions are you currently licensed? Select all that apply.				
Alabama	61	72	< 1	1.3
Alaska	45	41	< 1	< 1
Arizona	167	162	2.2	2.9
Arkansas	72	46	< 1	< 1
California	673	567	8.9	10.0
Colorado	201	190	2.7	3.4
Connecticut	102	136	1.4	2.4
District of Columbia (Washington)	72	35	< 1	< 1
Delaware	63	56	< 1	< 1
Florida	342	240	4.5	4.2
Georgia	236	175	3.1	3.1

	n		%	
	PT KSR	PT WA	PT KSR	PT WA
Guam	6	0	< 1	< 1
Hawaii	90	35	1.2	< 1
Idaho	58	72	< 1	1.3
Illinois	386	293	5.1	5.2
Indiana	217	141	2.9	2.5
Iowa	70	77	< 1	1.4
Kansas	67	75	< 1	1.3
Kentucky	88	82	1.2	1.5
Louisiana	91	57	1.2	1.0
Maine	60	40	< 1	< 1
Maryland	242	154	3.2	2.7
Massachusetts	253	205	3.4	3.6
Michigan	239	139	3.2	2.5
Minnesota	178	165	2.4	2.9
Mississippi	49	40	< 1	< 1
Missouri	151	135	2.0	2.4
Montana	47	29	< 1	< 1
Nebraska	56	40	< 1	< 1
Nevada	71	69	< 1	1.2
New Hampshire	111	49	1.5	< 1
New Jersey	625	238	8.3	4.2
New Mexico	50	57	< 1	1.0
New York	737	649	9.8	11.5
North Carolina	202	189	2.7	3.3
North Dakota	33	31	< 1	< 1
Northern Mariana Islands	1	1	< 1	< 1
Ohio	199	173	2.6	3.1
Oklahoma	35	49	< 1	< 1
Oregon	174	127	2.3	2.2
Pennsylvania	371	301	4.9	5.3
Puerto Rico	0	4	< 1	< 1
Rhode Island	43	25	< 1	< 1
South Carolina	175	120	2.3	2.1
South Dakota	25	13	< 1	< 1
Tennessee	138	115	1.8	2.0
Texas	671	416	8.9	7.4
U.S. Virgin Islands	3	2	< 1	< 1
Utah	75	62	< 1	1.1
Vermont	30	23	< 1	< 1
Virginia	295	210	3.9	3.7
Washington	218	160	2.9	2.8

	n		%	
	PT KSR	PT WA	PT KSR	PT WA
West Virginia	39	24	< 1	< 1
Wisconsin	142	164	1.9	2.9
Wyoming	25	18	< 1	< 1
Q9 Which best describes the location of your PRIMARY clinical work setting?				
Urban/Metropolitan	2,621	2,263	34.8	40.0
Suburban	3,658	2,436	48.6	43.1
Rural	1,153	868	15.3	15.4
Q10 What is your employment status as a physical therapist?				
Actively employed as a physical therapist full-time	5,415	4,968	72.0	87.9
Actively employed as a physical therapist part-time	1,279	342	17.0	6.0
Self-employed as a physical therapist full-time	431	80	5.7	1.4
Self-employed as a physical therapist part-time	239	46	3.2	< 1
Unemployed, seeking employment as a physical therapist	160	217	2.1	3.8
Q11 Have you ever had an extended period of time (more than three months) away from actively working as a physical therapist? Includes work in clinical, administration, consultation, education, or research activities. *				
No, I have never had an extended break from my work	2,178	1,216	75.3	84.1
Yes, lasting 3 to 6 months	413	159	14.3	11.0
Yes, lasting 7 to 12 months	136	33	4.7	2.3
Yes, lasting 13 to 18 months	48	15	1.7	1.0
Yes, lasting 19 to 36 months	41	11	1.4	< 1
Yes, lasting 3 to 5 years	44	4	1.5	< 1
Yes, lasting 6 to 10 years	17	5	< 1	< 1
Yes, lasting greater than 10 years	15	3	< 1	< 1
Q12 How many physical therapist positions/jobs have you held in the past 12 months?				
1	5,487	3,507	72.9	62.0
2 to 3	1,873	1,963	24.9	34.7
4 to 5	91	111	1.2	2.0
6 to 7	5	10	< 1	< 1
More than 7	6	5	< 1	< 1
Q13 What percentage of your time over the past 12 months was spent working in:				
Academic institution (post-secondary)				
0	6,960	5,291	92.5	93.6
1 to 50	376	316	5.0	5.6
51 to 100	188	46	2.5	< 1
School system (preschool/primary/secondary)				
0	7,059	5,425	93.8	96.0
1 to 50	138	136	1.8	2.4
51 to 100	327	92	4.3	1.6

	n		%	
	PT KSR	PT WA	PT KSR	PT WA
Acute care hospital				
0	5,952	4,207	79.1	74.4
1 to 50	817	867	10.9	15.3
51 to 100	755	579	10.0	10.2
Health and wellness facility				
0	7,343	5,488	97.6	97.1
1 to 50	143	146	1.9	2.6
51 to 100	38	19	< 1	< 1
Outpatient facility (health system or hospital-based)				
0	5,439	3,788	72.3	67.0
1 to 50	447	581	5.9	10.3
51 to 100	1,638	1,284	21.8	22.7
Outpatient facility (private)				
0	5,242	3,197	69.7	56.6
1 to 50	458	511	6.1	9.0
51 to 100	1,824	1,945	24.2	34.4
Industrial Rehabilitation				
0	7,450	5,600	99.0	99.1
1 to 50	55	41	< 1	< 1
51 to 100	19	12	< 1	< 1
Inpatient Rehab Facility (IRF)				
0	6,935	4,987	92.2	88.2
1 to 50	328	445	4.4	7.9
51 to 100	261	221	3.5	3.9
US Military/Veterans Administration/Indian Health Services				
0	7,410	5,593	98.5	98.9
1 to 50	25	32	< 1	< 1
51 to 100	89	28	1.2	< 1
Patient's home/home care				
0	5,966	4,748	79.3	84.0
1 to 50	618	653	8.2	11.6
51 to 100	940	252	12.5	4.5
Research center				
0	7,480	5,621	99.4	99.4
1 to 50	31	29	< 1	< 1
51 to 100	13	3	< 1	< 1
Skilled Nursing Facility (SNF)				
0	6,381	4,697	84.8	83.1
1 to 50	497	507	6.6	9.0
51 to 100	646	449	8.6	7.9

	n		%	
	PT KSR	PT WA	PT KSR	PT WA
Assisted Living Facility (ALF)				
0	7,260	5,497	96.5	97.2
1 to 50	214	135	2.8	2.4
51 to 100	50	21	< 1	< 1
Long-term Acute Care (LTAC)				
0	7,421	5,562	98.6	98.4
1 to 50	82	78	1.1	1.4
51 to 100	21	13	< 1	< 1
Other				
0	7,195	5,512	95.6	97.5
1 to 50	185	90	2.5	1.6
51 to 100	144	51	1.9	< 1
Q14 Other than direct patient care, what are your PRINCIPAL areas of responsibility at your primary work setting? Select all that apply.				
None	1,843	1,694	24.5	30.0
Administration/Management	1,488	770	19.8	13.6
Supervision	2,754	1,417	36.6	25.1
Consultation	1,157	561	15.4	9.9
Research	344	233	4.6	4.1
Sales/Marketing	851	541	11.3	9.6
Academic education	478	311	6.4	5.5
Clinical education	2,313	1,452	30.7	25.7
[other]	429	179	5.7	3.2
Q15 Approximately what percentage of your time over the past 12 months was spent in direct patient care?				
0%	119	22	1.6	< 1
1 to 25%	346	52	4.6	< 1
26 to 50%	228	86	3.0	1.5
51 to 75%	1,008	609	13.4	10.8
76 to 100%	5,756	4,839	76.5	85.6
Q16 Approximately what percentage of time over the past 12 months did you provide physical therapy services via telehealth or virtual/digital sessions? Includes direct patient care, consultation, patient advocacy, and indirect care. *				
0%	1,575	707	54.5	48.9
1% to 25%	1,039	621	35.9	42.9
26% to 50%	134	82	4.6	5.7
51% to 75%	74	22	2.6	1.5
76% to 100%	67	13	2.3	< 1

	n		%	
	PT KSR	PT WA	PT KSR	PT WA
Q17 What is the approximate percentage of your patient population by age?				
18 years old and younger				
0	2,985	1,620	39.7	28.7
1 to 50	3,655	3,574	48.6	63.2
51 to 100	884	459	11.7	8.1
19 to 64 years old				
0	1,002	494	13.3	8.7
1 to 50	4,698	3,669	62.4	64.9
51 to 100	1,824	1,490	24.2	26.4
65 years old and older				
0	1,061	548	14.1	9.7
1 to 50	3,589	3,268	47.7	57.8
51 to 100	2,954	1,884	39.3	33.3
Does not apply	80	47	1.1	< 1
Q18 Are you a current member of American Physical Therapy Association (APTA)?				
Yes	2,145	2,440	28.5	43.2
No	5,213	2,997	69.3	53.0
I don't know	95	169	1.3	3.0
Q19 Have you completed or are you currently completing a Residency or Fellowship in a specialized area of Physical Therapy? **				
Yes	409	280	8.4	9.3
No	4,462	2,731	91.2	90.3
Q20 Which of these statements is true regarding your experience supervising PTAs over the past 12 months?				
I routinely supervise PTAs and have a good understanding of the knowledge and skills they need to provide safe and effective care	4,266	3,528	56.7	62.4
I do NOT routinely supervise PTAs and/or I do NOT have a good understanding of the knowledge and skills they need to provide safe and effective care	3,157	2,011	42.0	35.6

Note. Unless otherwise specified, the percentage values are based on total usable response sets of 7,524 (PT KSR) or 5,653 (PT WA). * Item was added to the background questionnaire in 2021. Reported percentages are based on the sample of respondents that provided data in 2021 and 2022 (KSR Survey = 2,892, WA Survey = 1,446). ** Item was added to the background questionnaire in 2020. The percentages reported in this table are based on the total usable response sets for 2020, 2021, and 2022 (KSR Survey = 4,892; WA Survey = 3,024).

Appendix E. Work Activity Survey Results

	n	*M*	*SD*	*%Perf*	*%Imp*	*Slope*
Patient/Client Assessment						
Information Gathering & Synthesis						
Interview patients/clients, caregivers, and family to obtain patient/client history and current information (e.g., medical, surgical, medications, social, cultural, language preference, economic) to…						
…establish prior and current level of function/activity	2,756	4.78	0.51	100.0	100.0	0.01
…establish general health status	2,756	4.51	0.69	100.0	99.9	0.01
…identify red flags (e.g., fever, malaise, unexplained weight change) and contraindications	2,756	4.71	0.63	100.0	99.9	-0.02
…identify risk factors and needs for preventative measures	2,756	4.40	0.80	100.0	99.8	0.00
…identify patient/client's, family/caregiver's goals, values, and preferences	2,756	4.55	0.69	100.0	99.8	**0.04**
…determine if patient/client is appropriate for PT	2,756	4.60	0.71	99.8	99.6	0.02
…determine insurance and financial resources and issues (e.g., co-pays, deductibles, insurance limitations)	2,756	3.37	1.13	92.9	87.7	0.03
…determine impact of medications on plan of care (e.g., medication reconciliation, timing of intervention delivery, adherence)	2,756	3.75	1.02	99.0	97.4	-0.02
Administer standardized questionnaires (e.g., pain inventory, fall risk assessment)	2,755	3.73	1.09	99.0	95.7	0.02
Review medical records (e.g., lab values, diagnostic tests, imaging, specialty reports, narrative, consults)	2,755	4.14	0.94	99.6	99.1	0.01
Gather information/discuss patient/client's current health status with interprofessional/interdisciplinary team members	2,755	4.02	0.97	99.3	98.7	**0.04**
Identify signs/symptoms of change in patient/client's health status that require intervention by interprofessional/interdisciplinary team members	2,755	4.40	0.80	99.7	99.5	0.00
Systems Review						
Perform screen of the…						
…patient/client's current affect, cognition, communication, and learning preferences (e.g., ability to convey needs, consciousness, orientation, expected emotional/behavioral responses)	2,755	3.99	1.02	97.4	95.9	0.00
…patient/client's quality of speech, hearing, and vision (e.g., dysarthria, pitch/tone, use of corrective lenses, use of hearing aids)	2,755	3.28	1.16	91.7	86.5	0.02
…vestibular system (e.g., dizziness, vertigo)	2,688	3.50	1.07	95.4	92.8	0.00
…gastrointestinal system (e.g., difficulty swallowing, nausea, change in appetite/diet, change in bowel function)	2,688	2.97	1.08	90.6	83.9	**0.04**

	n	M	SD	%Perf	%Imp	Slope
…genitourinary system (e.g., changes in bladder function, catheter complications)	2,688	3.07	1.11	89.9	83.7	0.03
…reproductive system (e.g., sexual and/or menstrual dysfunction, menopause status)	2,688	2.51	1.12	83.1	67.7	**0.03**
…cardiovascular/pulmonary system (e.g., blood pressure, heart rate, respiration rate)	2,688	4.13	0.93	98.4	97.8	0.00
…lymphatic system (e.g., primary or secondary …lymphedema)	2,688	3.13	1.07	91.3	86.0	-0.03
…integumentary system (e.g., presence of scar formation, skin integrity, discoloration)	2,688	3.64	1.00	98.3	96.8	0.00
…musculoskeletal system (e.g., gross symmetry, strength, range of motion)	2,688	4.80	0.48	100.0	99.9	0.01
…neuromuscular system (e.g., gross coordination, motor function, balance, locomotion, gross sensory function)	2,688	4.75	0.52	100.0	100.0	0.00
Tests & Measures						
Cardiovascular/Pulmonary						
Select and perform tests and measures of…						
…cardiovascular function (e.g., blood pressure, heart rate, heart sounds)	2,625	4.18	0.97	98.3	97.4	-0.01
…pulmonary function (e.g., respiratory rate, breathing patterns, breath sounds, chest excursion)	2,625	3.70	1.16	95.5	92.3	0.02
…perfusion and gas exchange (e.g., oxygen saturation)	2,625	3.66	1.20	92.1	87.5	0.03
…peripheral circulation (e.g., capillary refill, blood pressure in upper versus lower extremities)	2,625	3.27	1.12	92.6	88.5	0.01
…critical limb ischemia (e.g., peripheral pulses, skin perfusion pressure)	2,625	3.19	1.16	89.7	84.3	0.00
…physiological responses to position change (e.g., orthostatic hypotension, skin color, blood pressure, heart rate)	2,625	4.04	1.02	97.8	96.5	0.01
…aerobic capacity under maximal and submaximal conditions (e.g., endurance, exercise tolerance, metabolic equivalents, perceived exertion)	2,625	3.67	1.11	95.1	92.0	0.02
Anthropometric						
Select and perform tests and measures of…						
…body composition (e.g., percent body fat, lean muscle mass)	2,624	2.55	1.11	87.6	72.2	0.05
…body dimensions (e.g., height, weight, girth, limb length, head circumference/shape)	2,624	2.70	1.12	92.4	80.3	**0.06**
Quantify and qualify edema (e.g., pitting, volume, circumference)	2,624	3.25	1.05	95.1	91.6	0.00

	n	M	SD	%Perf	%Imp	Slope
Arousal, Attention, & Cognition						
Select and perform tests and measures of…						
…arousal and orientation (e.g., level of consciousness, time, person, place, situation)	2,559	3.76	1.23	91.3	86.0	0.01
…attention and cognition (e.g., ability to process commands, delirium, confusion)	2,559	3.80	1.14	92.5	89.0	0.01
…communication (e.g., expressive and receptive skills, following instructions)	2,559	3.81	1.07	94.1	91.6	0.04
…recall (including memory and retention)	2,559	3.43	1.10	92.1	88.1	0.00
Nerve Integrity						
Select and perform tests and measures of…						
…cranial nerve integrity (e.g., facial asymmetry, oculomotor function, hearing)	2,559	3.38	1.14	93.6	89.7	-0.01
…spinal nerve integrity (e.g., dermatome, myotome)	2,559	4.04	0.98	98.7	97.9	-0.01
…peripheral nerve integrity (e.g., sensation, strength)	2,559	4.24	0.85	99.4	99.2	0.01
…neural provocation (e.g., tapping, tension, stretch)	2,559	3.56	1.12	96.7	93.4	-0.01
Environmental & Community Integration/Reintegration (Home, Work, Job, School, Play, & Leisure)						
Assess activities of daily living (ADL) (e.g., bed mobility, transfers, household mobility, dressing, self-care, toileting, sexual relations)	2,502	4.51	0.80	99.1	98.6	0.03
Assess instrumental activities of daily living (IADL) (e.g., household chores, hobbies)	2,502	4.14	0.97	98.0	96.8	**0.05**
Assess ability to perform skills needed for integration or reintegration into the community, work, or school	2,502	4.22	0.92	98.1	97.2	**0.04**
Assess barriers (e.g., social, economic, physical, psychological, environmental, work conditions and activities) to home, community, work, or school integration/reintegration	2,502	4.19	0.91	98.9	98.2	0.04
Assess safety in home, community, work, or school environments	2,502	4.26	0.93	95.5	94.2	0.04
Assess ability to participate in activities with or without the use of devices, equipment, or technologies	2,502	4.34	0.85	98.7	98.2	**0.03**
Ergonomics and Body Mechanics						
Select and perform tests and measures of…						
…ergonomics and body mechanics during functional activities	2,461	4.20	0.96	98.8	97.7	0.03
…postural alignment and position (static and dynamic)	2,461	4.23	0.92	99.7	99.2	0.01
…specific work conditions or activities	2,461	3.92	1.05	96.2	93.7	0.02
…tools, devices, equipment, and workstations related to work actions, tasks, or activities	2,461	3.63	1.14	94.1	89.5	**0.04**

	n	M	SD	%Perf	%Imp	Slope
Functional Mobility, Balance, & Vestibular						
Select and perform tests and measures of…						
…balance (dynamic and static) with or without the use of specialized equipment	2,461	4.58	0.68	99.7	99.6	0.01
…gait and locomotion (e.g., ambulation, wheelchair mobility) with or without the use of specialized equipment	2,461	4.70	0.59	99.6	99.5	0.02
…mobility during functional activities and transitional movements (e.g., transfers, bed mobility)	2,461	4.68	0.65	99.6	99.3	0.03
…vestibular function (e.g., peripheral dysfunction, central dysfunction, BPPV)	2,461	3.63	1.07	94.4	92.0	0.00
Integumentary Integrity						
Assess skin characteristics (e.g., continuity of skin color, sensation, temperature, texture, turgor)	2,436	3.51	1.05	97.2	95.0	-0.01
Assess wound characteristics (e.g., tissue involvement, depth, tunneling, burn classification, ulcer/injury classification)	2,436	3.17	1.19	83.9	76.1	-0.01
Assess scar tissue characteristics (e.g., banding, pliability, sensation, and texture)	2,435	3.28	1.11	92.6	87.6	0.00
Assess activities, positioning, and postures that may produce or relieve trauma to the skin	2,435	3.79	1.12	92.0	88.5	0.02
Assess devices and equipment that may produce or relieve trauma to the skin	2,435	3.67	1.15	90.0	85.3	0.01
Joint Integrity & Range of Motion						
Select and perform tests and measures of…						
…spinal and peripheral joint stability (e.g., ligamentous integrity, joint structure)	2,403	4.11	1.06	98.7	96.7	0.02
…spinal and peripheral joint mobility (e.g., glide, end feel)	2,403	3.98	1.17	98.0	94.3	0.01
…range of motion (e.g., passive, active, functional)	2,403	4.60	0.68	99.9	99.8	0.02
…flexibility (e.g., muscle length, soft tissue extensibility)	2,403	4.38	0.88	99.7	99.0	0.01
Motor Function						
Select and perform tests and measures of…						
…muscle tone (e.g., hypertonicity, hypotonicity, dystonia)	2,403	4.28	0.89	99.5	99.3	0.00
…dexterity, coordination, and agility (e.g., rapid alternating movement, finger to nose)	2,403	3.96	1.01	98.8	97.9	0.01
…ability to initiate, modify and control movement patterns and postures (e.g., catching a ball, gait)	2,403	4.35	0.84	99.6	99.3	0.03
…ability to change movement performance with practice (e.g., motor learning)	2,403	4.35	0.82	99.7	99.4	0.01
…movement quality (e.g., purpose, precision, efficiency, biomechanics, kinematics)	2,403	4.40	0.78	99.7	99.5	0.00

	n	M	SD	%Perf	%Imp	Slope
Muscle Performance						
Select and perform tests and measures of						
…muscle strength, power, and endurance without specialized equipment (e.g., manual muscle test, functional strength testing)	2,387	4.65	0.65	99.9	99.6	0.03
…muscle strength, power, and endurance with specialized equipment (e.g., isokinetic testing, dynamometry)	2,387	3.50	1.40	87.9	76.9	0.04
…electrophysiological function using surface electrodes (e.g., surface EMG)	2,387	2.54	1.29	68.2	47.1	0.01
…electrophysiological function using needle insertion (e.g., nerve conduction)	2,387	2.30	1.25	61.6	37.2	0.04
…muscle integrity (e.g., ultrasound imaging)	2,387	2.49	1.31	63.3	41.4	0.00
Neuromotor Development & Sensory Integration						
Select and perform tests and measures of…						
…acquisition and evolution of motor skills throughout the lifespan	2,387	3.24	1.27	81.6	71.1	0.04
…sensorimotor integration	2,387	3.38	1.18	86.5	79.1	0.04
…developmental reflexes and reactions (e.g., asymmetrical tonic neck reflex, righting reactions)	2,387	3.18	1.34	75.5	62.9	0.04
…oral motor function, phonation, and speech production	2,387	2.61	1.21	68.7	51.7	0.03
Reflex Integrity						
Select and perform tests and measures of…						
…deep tendon/muscle stretch reflexes (e.g., quadriceps, biceps)	2,370	3.68	1.15	98.3	94.6	0.01
…upper motor neuron integrity (e.g., Babinski reflex, Hoffman sign)	2,370	3.66	1.16	96.8	93.2	0.03
…superficial reflexes and reactions (e.g., cremasteric reflex, abdominal reflexes)	2,370	2.89	1.32	87.5	71.9	0.00
Pain & Sensory Integrity						
Select and perform tests and measures of…						
…pain (e.g., location, intensity, frequency, central, peripheral, psychogenic)	2,370	4.45	0.82	99.3	98.8	0.03
…deep sensation (e.g., proprioception, kinesthesia, pressure)	2,370	3.80	1.07	98.4	96.5	-0.01
…superficial sensation (e.g., touch, temperature discrimination)	2,370	3.92	1.01	98.8	97.3	-0.02
…visceral organ sensitivity and integrity (e.g., palpation, auscultation)	2,370	2.84	1.24	84.4	70.6	0.01

	n	M	SD	%Perf	%Imp	Slope
Evaluation & Diagnosis						
Interpret each of the following types of data to determine the need for intervention or the response to intervention:						
Cardiovascular/pulmonary system	2,360	4.24	0.94	97.9	96.9	0.00
Lymphatic system	2,360	3.04	1.13	89.9	82.1	-0.02
Arousal, attention, cognition, and communication	2,360	3.79	1.11	94.3	90.9	0.03
Neuromuscular system	2,360	4.63	0.63	99.7	99.5	0.01
Functional mobility, balance, and vestibular	2,360	4.66	0.62	99.8	99.6	0.01
Musculoskeletal system	2,360	4.81	0.47	99.9	99.9	0.00
Integumentary system	2,360	3.52	1.06	97.2	94.4	-0.01
Anthropometric	2,360	2.80	1.11	89.3	78.4	-0.03
Gastrointestinal system	2,360	2.73	1.08	87.6	76.7	0.02
Genitourinary system	2,360	2.72	1.10	87.0	75.2	**0.02**
Need for or use of assistive and adaptive devices/technologies	2,341	4.46	0.84	98.7	97.8	0.03
Need for or use of orthotic, protective, and supportive devices/technologies	2,341	4.14	0.97	98.4	97.3	0.00
Need for or use of prosthetic devices/technologies	2,341	3.82	1.13	89.7	85.5	-0.03
Barriers to home, community, work, or school integration/reintegration	2,341	4.19	0.95	98.0	96.8	0.05
Ergonomics and body mechanics	2,341	4.14	0.94	99.2	98.4	**0.01**
Pain and sensory integrity	2,341	4.26	0.84	99.6	99.4	**0.02**
ADLs/IADLs and home management	2,341	4.45	0.80	99.1	98.5	**0.04**
Imaging, lab values, and medications	2,341	3.63	1.05	96.8	94.6	0.04
Electrodiagnostic test results (e.g., electromyography, nerve conduction velocity)	222	2.89	1.26	98.2	65.8	NA
Evaluate the patient/client's ability to assume or resume home, community, work, school, and/or leisure activities	2,333	4.60	0.68	99.5	99.1	0.02
Develop physical therapy diagnosis by integrating system and non-system data	2,333	4.40	0.86	99.2	98.5	0.00
Development of Prognosis, Plan of Care, & Goals						
Establish PT prognosis based on information gathered during the examination process	2,329	4.61	0.67	99.8	99.6	0.01
Develop plan of care based on data gathered during the examination process, incorporating information from the patient/client, caregiver, family members, and other professionals	2,329	4.79	0.50	99.9	99.8	0.00
Revise treatment intervention plan based on treatment outcomes, change in patient/client's health status, and ongoing evaluation	2,329	4.78	0.50	100.0	100.0	0.00
Develop objective and measurable goals based on information gathered during the examination process,	2,329	4.70	0.61	100.0	99.9	0.01

	n	M	SD	%Perf	%Imp	Slope
in collaboration with the patient/client, caregiver, family members, and/or other professionals						
Select interventions based on information gathered during the examination process, incorporating information from the patient/client, caregiver, family members, and other professionals	2,329	4.79	0.49	100.0	100.0	0.01
Modify plan of care based on patient/client's resources (e.g., financial, transportation, time, insurance benefits, available technologies)	2,329	4.54	0.77	99.5	99.0	0.01
Interventions						
Procedural Interventions						
Therapeutic Exercise/Therapeutic Activities						
Perform and/or train patient/client/caregiver in…						
…aerobic capacity/endurance conditioning	2,897	3.97	0.99	98.7	97.4	**0.04**
…balance, coordination, and agility activities	2,897	4.58	0.66	99.9	99.8	0.01
…body mechanics and postural stabilization techniques	2,897	4.45	0.81	99.9	99.4	-0.01
…flexibility techniques	2,897	3.72	1.08	99.7	97.2	-0.03
…neuromotor techniques (e.g., movement pattern training, neuromuscular education or re-education)	2,897	4.28	0.88	99.8	99.0	0.02
…relaxation techniques	2,897	3.44	1.11	99.0	95.2	0.01
…strength, power, and endurance exercises	2,897	4.42	0.77	99.8	99.6	**0.05**
…genitourinary management (e.g., pelvic floor exercises, bladder strategies)	2,896	2.73	1.25	63.9	53.4	0.05
…gastrointestinal management (e.g., bowel strategies, positioning to avoid reflux)	2,896	2.61	1.21	63.4	51.9	0.05
…manual/mechanical airway clearance techniques (e.g., assistive devices, assistive cough, incentive spirometer, flutter valve, percussion, vibration)	2,896	2.84	1.26	60.8	51.2	**0.04**
…techniques to maximize ventilation and perfusion (e.g., positioning, active cycle breathing, autogenic drainage, paced breathing, pursed lip breathing)	2,896	3.09	1.24	71.6	64.0	**-0.01**
…mechanical repositioning for vestibular dysfunction	2,896	3.18	1.20	78.1	71.7	-0.01
…habituation/adaptation exercises for vestibular dysfunction	2,896	3.19	1.19	79.8	73.7	0.00
…postural drainage	1,576	2.51	1.25	73.4	38.8	-0.01
Functional Training						
Recommend barrier accommodations or modifications (e.g., ramps, grab bars, raised toilet, environmental control units)	2,896	3.76	1.22	89.4	85.8	-0.04
Perform and/or train patient/client in…						

	n	M	SD	%Perf	%Imp	Slope
…the use of environmental modifications (e.g., ramps, grab bars, raised toilet, environmental control units)	2,819	3.77	1.22	91.1	87.1	-0.02
…activities of daily living (ADL) (e.g., bed mobility, transfers, household mobility, dressing, self-care, toileting, sexual relations)	2,819	4.18	1.03	97.3	96.0	-0.02
…community and leisure integration or reintegration (e.g., work/school/play)	2,819	3.86	1.07	95.9	93.4	**0.03**
…instrumental activities of daily living (IADL) (e.g., household chores, hobbies)	2,819	3.91	1.04	96.7	94.8	**0.04**
…mobility techniques	2,819	4.32	0.86	98.8	98.3	-0.02
…gross motor developmental progression	2,328	3.48	1.31	85.1	75.0	0.00
…fall prevention and fall recovery strategies	2,819	4.43	0.86	98.4	97.5	-0.03
…behavior modification and strategies that enhance functioning (e.g., energy conservation, pacing, pre-activity planning, reminder schedules)	2,819	3.84	1.08	97.4	95.1	-0.03
Manual Therapy Techniques						
Perform manual lymphatic drainage	2,788	2.61	1.22	49.4	38.2	0.00
Perform dry needling	2,788	2.90	1.41	44.6	33.4	0.01
Perform spinal and peripheral manual traction	2,788	3.16	1.23	80.1	71.4	0.00
Perform and/or train patient/client/caregiver in soft tissue mobilization (e.g., connective tissue massage, therapeutic massage, foam rolling)	2,787	3.43	1.21	92.5	86.8	-0.01
Perform instrument-assisted soft tissue mobilization	2,787	3.18	1.28	79.0	69.6	-0.03
Perform peripheral joint range of motion	2,787	4.04	1.03	97.5	96.0	-0.01
Perform peripheral mobilization/manipulation (thrust)	2,761	3.02	1.35	75.3	62.7	**-0.06**
Perform peripheral mobilization (non-thrust)	2,761	3.72	1.24	87.3	81.7	-0.03
Perform spinal mobilization/manipulation (thrust)	2,760	3.11	1.35	74.7	63.0	**-0.06**
Perform spinal mobilization (non-thrust)	2,761	3.67	1.26	84.7	78.6	-0.04
Perform cervical spinal manipulation (thrust)	2,761	2.76	1.38	67.2	51.0	-0.06
Perform thoracic and lumbar spinal manipulation (thrust)	2,761	3.23	1.35	76.7	66.0	-0.05
Apply taping for…						
…neuromuscular reeducation	2,726	2.91	1.19	88.0	77.0	**-0.07**
…lymphatic drainage	2,727	2.47	1.17	54.8	40.0	**-0.08**
…pain management	2,726	2.82	1.20	83.9	71.7	**-0.10**
Equipment & Devices						
Fabricate, apply, and/or adjust…						
…adaptive devices (e.g., utensils, seating and positioning devices, steering wheel devices)	2,725	3.05	1.27	63.5	54.4	-0.02
…protective devices (e.g., braces, cushions, helmets, protective taping)	2,725	3.22	1.21	74.3	67.5	-0.04

	n	M	SD	%Perf	%Imp	Slope
…supportive devices (e.g., compression garments, corsets, elastic wraps, neck collars, serial casts, short-stretch bandages)	2,725	3.18	1.21	75.1	68.0	-0.04
…orthotic devices (e.g., braces, shoe inserts, splints)	2,725	3.41	1.18	84.8	79.9	-0.02
Apply and/or adjust…						
…assistive devices/technologies (e.g., canes, crutches, walkers, wheelchairs, tilt tables, standing frames)	2,692	4.41	0.90	98.2	97.4	-0.03
…prosthetic devices/technologies (e.g., lower-extremity and upper-extremity prostheses, microprocessor-controlled prosthetic devices)	2,692	3.31	1.26	72.1	64.6	-0.08
…mechanical neuromuscular re-education devices/technologies (e.g., weighted vests, therapeutic suits, body weight supported treadmill)	2,692	3.18	1.35	66.0	55.7	0.00
…prescribed oxygen during interventions	2,692	3.58	1.33	67.7	59.9	-0.03
Train patient/client/caregiver in the use of…						
…adaptive devices (e.g., utensils, seating and positioning devices, steering wheel devices)	2,638	3.28	1.34	66.0	55.8	-0.01
…assistive devices/technologies (e.g., canes, crutches, walkers, wheelchairs, tilt tables, standing frames)	2,638	4.34	0.96	96.4	94.9	-0.03
…orthotic devices (e.g., braces, shoe inserts, splints)	2,638	3.79	1.15	92.7	89.4	-0.03
…prosthetic devices/technologies (e.g., lower-extremity and upper-extremity prostheses, microprocessor-controlled prosthetic devices)	2,638	3.36	1.27	68.3	60.2	**-0.07**
…protective devices (e.g., braces, cushions, helmets, protective taping)	2,638	3.50	1.21	77.5	71.6	**-0.05**
…supportive devices (e.g., compression garments, corsets, elastic wraps, neck collars, serial casts, short-stretch bandages)	2,638	3.41	1.22	80.8	74.3	-0.05
…mechanical neuromuscular re-education devices/technologies (e.g., weighted vests, therapeutic suits, body weight supported treadmill)	2,638	3.17	1.33	64.8	53.8	**-0.04**
Integumentary Repair & Protection Techniques						
Perform and/or train patient/client/caregiver in…						
…nonselective debridement (e.g., removal of nonselective areas of devitalized tissue)	2,607	2.53	1.34	36.1	20.6	-0.03
…selective enzymatic or autolytic debridement (e.g., removal of specific areas of devitalized tissue)	2,607	2.51	1.36	34.8	19.0	-0.03
…hyperbaric therapy	2,607	2.18	1.22	31.1	14.1	-0.05
…negative pressure wound therapy (e.g., vacuum-assisted wound closure)	2,607	2.42	1.29	34.7	18.9	-0.02

	n	M	SD	%Perf	%Imp	Slope
…application of topical agents (e.g., cleansers, creams, moisturizers, ointments, sealants) and dressings (e.g., hydrogels, wound coverings)	2,607	2.68	1.27	45.9	32.0	0.01
…desensitization techniques (e.g., brushing, tapping, use of textures)	2,607	2.99	1.13	76.5	68.4	-0.03
Perform sharp debridement (e.g., removal of specific areas of devitalized tissue)	2,607	2.43	1.34	34.3	18.0	-0.01
Recommend topical agents (e.g., pharmacological to physician, over-the-counter to patient) and advanced wound dressings (e.g., negative pressure wound therapy, wound coverings)	2,607	2.59	1.27	42.9	28.1	-0.01
Therapeutic Modalities						
Perform and/or train patient/client/caregiver in…						
…biofeedback therapy (e.g., relaxation techniques, muscle reeducation, EMG)	2,575	3.13	1.22	82.3	72.7	-0.02
…iontophoresis	2,575	2.31	1.21	63.0	40.5	-0.08
…phonophoresis	2,562	2.05	1.25	46.9	21.4	**-0.11**
…electrotherapy modalities, excluding iontophoresis (e.g., neuromuscular electrical stimulation (NMES), transcutaneous electrical nerve stimulation (TENS), functional electrical stimulation (FES), interferential therapy, high-voltage pulsed current)	2,575	3.17	1.25	88.5	80.2	-0.04
…cryotherapy (e.g., cold pack, ice massage, vapocoolant spray)	2,575	3.29	1.21	92.8	86.6	**-0.08**
…hydrotherapy using contrast baths/pools	2,575	2.39	1.33	52.6	31.0	**-0.11**
…hydrotherapy (e.g., aquatic exercise, underwater treadmill)	2,575	2.92	1.34	54.2	39.9	-0.03
…phototherapy (laser light)	2,575	2.10	1.25	46.3	22.3	-0.03
…monochromatic infrared agent procedures (e.g., light emitting diodes [LEDs])	2,562	1.87	1.14	39.6	15.0	**-0.06**
…ultrasound procedures	2,562	2.38	1.30	72.2	46.8	-0.08
…diathermy	2,562	1.91	1.21	44.7	17.5	**-0.11**
…dry heat thermotherapy (e.g., Fluidotherapy)	2,562	1.97	1.17	46.6	20.6	**-0.08**
…hot pack thermotherapy	2,562	3.03	1.24	86.0	76.4	-0.05
…paraffin bath thermotherapy	2,562	2.35	1.27	53.3	32.1	**-0.12**
…shockwave therapy	2,562	1.88	1.19	39.9	14.6	**-0.10**
…blood-flow restriction training	253	2.75	1.27	95.5	38.3	NA
…cupping	253	2.51	1.17	95.9	40.7	NA
Mechanical Modalities						
Apply and/or train patient/client/caregiver in…						
…intermittent pneumatic compression	2,555	2.75	1.28	54.4	39.2	**-0.05**
…assisted movement devices (e.g., dynamic splint, continuous passive motion devices)	2,555	2.69	1.23	66.6	51.4	**-0.10**
…mechanical spinal traction	2,555	2.77	1.25	67.3	52.2	**-0.08**

	n	M	SD	%Perf	%Imp	Slope
Non-procedural Interventions						
Communication						
Discuss physical therapy evaluation findings, interventions, goals, prognosis, discharge planning, and plan of care with…						
…physical therapists, physical therapist assistants, and/or support staff	2,549	4.71	0.64	99.4	99.0	-0.01
…interprofessional/interdisciplinary team members	2,549	4.56	0.79	98.6	97.6	-0.01
…patient/client/caregiver	2,549	4.82	0.48	100.0	99.9	0.00
Provide written, oral, and electronic information to the patient/client and/or caregiver	2,549	4.67	0.66	99.8	99.5	-0.02
Documentation						
Document…						
…examination results	2,536	4.81	0.48	99.9	99.8	0.01
…evaluation to include diagnosis, goals, and prognosis	2,536	4.81	0.50	99.9	99.8	0.00
…intervention(s) and patient/client response(s) to intervention	2,536	4.82	0.47	100.0	99.9	0.00
…patient/client/caregiver education	2,536	4.78	0.51	100.0	100.0	0.01
…outcomes (e.g., discharge summary, reassessments)	2,536	4.70	0.62	99.9	99.7	0.01
…communication with the interdisciplinary/ interprofessional team related to the patient/client's care	2,536	4.59	0.72	99.3	99.1	0.00
…rationale for billing and reimbursement	2,536	4.38	0.92	98.4	97.1	0.00
…disclosure and consent (e.g., disclosure of medical information, consent for treatment)	2,536	4.44	0.88	97.9	96.8	0.01
…letter of medical necessity (e.g., wheelchair, assistive equipment, disability parking placard)	2,536	3.87	1.19	86.6	81.9	-0.02
…intervention/plan of care for specialized services and settings (e.g., individual education plan, individual family service plan, vocational transition plan)	2,536	4.16	1.13	78.8	73.4	0.00
Assign billing codes for physical therapy evaluation and treatment provided	2,549	4.51	0.89	97.5	95.8	**-0.02**
Education						
Educate patient/client and/or caregiver about…						
…the patient/client's current condition and health status (e.g., nature of the condition, prognosis, …potential benefits of physical therapy interventions, potential treatment outcomes)	2,525	4.81	0.46	100.0	100.0	0.00
…the role of the physical therapist and/or physical therapist assistant in patient/client management	2,525	4.74	0.56	99.8	99.7	0.00

	n	M	SD	%Perf	%Imp	Slope
…lifestyle and behavioral changes to promote wellness (e.g., nutrition, physical activity, tobacco cessation)	2,525	4.44	0.81	99.4	99.1	-0.01
…the role of physical therapy in transitional planning (e.g., hospice, palliative care, setting changes)	2,525	4.08	1.14	87.3	82.9	-0.01
Education the healthcare team about…						
…the role of the physical therapist and/or physical therapist assistant in patient/client management	2,525	4.39	0.92	97.0	95.8	-0.01
…safe patient handling (e.g., injury prevention, ergonomics, use of equipment)	2,525	4.42	0.91	95.6	93.8	-0.02
Educate community groups on lifestyle and behavioral changes to promote wellness (e.g., nutrition, physical activity, tobacco cessation)	2,520	3.63	1.16	81.9	76.5	-0.01
Participate in the clinical education of students	2,520	3.98	1.04	85.6	81.9	-0.01
Patient/client & Staff Safety						
Emergency Procedures						
Implement emergency procedures (e.g., CPR, AED, calling a code)	2,520	4.05	1.09	91.2	88.4	-0.04
Perform first aid	2,520	3.83	1.15	91.4	87.7	-0.04
Implement disaster response procedures	2,520	3.66	1.20	84.5	78.7	-0.04
Environmental Safety						
Perform risk assessment of the physical environment (e.g., barrier-free environment, outlets, windows, floors, lighting)	2,329	4.15	1.01	94.2	92.0	0.02
Prepare and maintain a safe working environment for performing interventions (e.g., unobstructed walkways, equipment availability)	2,329	4.43	0.86	97.0	95.9	0.02
Perform regular equipment inspections and/or maintenance (e.g., modalities, assistive devices)	2,329	4.03	1.06	91.4	88.0	0.02
Infection Control						
Perform and/or train patient/client and/or caregiver on appropriate infection control practices (e.g., universal precautions, hand hygiene, isolation, airborne precautions, equipment cleaning)	2,329	4.10	1.10	93.4	90.4	0.01
Research & Evidence-Based Practice						
Search the literature for current best evidence	2,327	4.08	0.90	99.7	99.1	0.01
Evaluate the quality of published data	2,327	3.90	0.99	98.2	96.3	-0.01
Integrate current best evidence, clinical experience, and patient values in clinical practice (e.g., clinical prediction rules, patient preference)	2,327	4.29	0.83	99.7	99.4	0.02
Design, direct, and/or participate in research activities	2,327	3.06	1.24	82.8	71.2	-0.06
Compare intervention outcomes with normative data	2,327	3.60	1.08	91.9	87.4	0.01

	n	M	SD	%Perf	%Imp	Slope
Professional Responsibilities						
Supervise physical therapist assistant(s) and support personnel (licensed/unlicensed)	2,507	4.46	0.89	89.2	86.5	0.01
Assign tasks to other personnel (licensed/unlicensed) to assist with patient/client care	2,507	4.19	1.01	92.8	90.3	-0.02
Discuss ongoing patient care with the interprofessional/interdisciplinary team members	2,507	4.50	0.80	98.7	98.1	0.00
Refer patient/client to specialists or other healthcare providers when necessary	2,507	4.48	0.78	99.2	98.8	0.01
Disclose financial interest in recommended products or services to the patient/client	2,507	3.65	1.29	77.2	68.2	-0.02
Provide notice and information about alternative care when the physical therapist terminates provider relationship with the patient/client	2,507	4.00	1.07	92.5	89.4	0.01
Document transfer of patient/client care to another physical therapist (therapist of record)	2,507	3.86	1.22	90.0	84.2	0.00
Report healthcare providers that are suspected to not perform their professional responsibilities with reasonable skill and safety to the appropriate authorities	2,507	4.15	1.05	93.0	90.0	-0.01
Report suspected cases of abuse to the appropriate authority	2,507	4.47	0.88	95.3	93.7	-0.01
Report suspected illegal or unethical acts performed by healthcare providers to the relevant authority	2,498	4.45	0.91	95.5	93.8	-0.03
Advocate for public access to physical therapy and other healthcare services	2,498	4.26	0.98	95.4	93.5	-0.02
Determine own need for professional development	2,498	4.59	0.69	99.7	99.5	0.02
Participate in learning and/or development activities (e.g., journal clubs, self-directed reading, continuing competence activities) to maintain the currency of knowledge, skills, and abilities	2,498	4.45	0.82	99.4	98.8	0.01
Practice within the federal and jurisdiction regulations and professional standards	2,498	4.73	0.63	99.6	99.2	-0.02
Participate in professional organizations	2,498	3.78	1.17	98.0	94.9	-0.04
Perform community-based screenings (e.g., fall risk, posture, musculoskeletal, flexibility, sports-specific)	2,498	3.75	1.15	88.8	84.9	**-0.05**
Participate in performance improvement and quality reporting activities (e.g., Physician Quality Reporting System, standardized outcomes measurement, application of health informatics)	2,498	3.88	1.13	92.6	89.0	**-0.05**

Note. Slope values in boldface type are statistically significant ($p < 0.05$).

Appendix F. Knowledge and Skill Requirements Results

	n	*M*	*SD*	*%Imp*	*Slope*
CARDIOVASCULAR/PULMONARY SYSTEM					
Physical Therapy Examination					
Cardiovascular/pulmonary system tests/measures, including outcome measures, and their applications according to current best evidence	3,691	4.04	0.95	99.4	0.04
Anatomy and physiology of the cardiovascular/pulmonary system as related to tests/measures	3,691	4.01	0.95	99.7	0.03
Movement analysis as related to the cardiovascular/pulmonary system (e.g., rib cage excursion, breathing pattern)	3,691	3.90	0.95	99.5	0.03
Foundations of Evaluation, Differential Diagnosis and Prognosis					
Differential diagnoses related to diseases/conditions of the cardiovascular/pulmonary systems	3,691	4.04	0.91	99.7	0.02
Cardiovascular/pulmonary system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis	3,690	4.03	0.89	99.6	0.04
Non-pharmacological medical management of the cardiovascular/pulmonary system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,691	3.51	0.98	98.9	0.02
[!]The impact of pharmacology used to treat the cardiovascular/pulmonary system on physical therapy management	3,691	3.66	0.96	99.0	0.11
Interventions					
Cardiovascular/pulmonary system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence	3,691	4.13	0.90	99.6	0.02
Anatomy and physiology of the cardiovascular/pulmonary system as related to physical therapy interventions, daily activities, and environmental factors	3,691	4.18	0.87	99.6	0.00
Adverse effects or complications on the cardiovascular/pulmonary system from physical therapy interventions	3,691	4.44	0.75	99.8	0.00
Adverse effects or complications on the cardiovascular/pulmonary system from physical therapy interventions used on other systems	3,466	4.49	0.73	99.9	-0.01
LYMPHATIC SYSTEM					
Physical Therapy Examination					
Lymphatic system tests/measures, including outcome measures, and their applications according to current best evidence	3,539	3.02	0.98	95.8	0.02
Anatomy and physiology of the lymphatic system as related to tests/measures	3,539	3.12	1.00	96.6	0.02

	n	M	SD	%Imp	Slope
Movement analysis as related to the lymphatic system (e.g., compensatory movement, extremity range of motion)	3,539	3.29	1.03	96.8	0.01
Foundations for Evaluation, Differential Diagnosis and Prognosis					
Differential diagnoses related to diseases/conditions of the lymphatic system	3,539	3.27	1.00	97.4	0.01
Lymphatic system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis	3,539	3.23	0.98	97.4	0.02
Non-pharmacological medical management of the lymphatic system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,539	2.98	0.97	95.4	0.02
Interventions					
Lymphatic system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence	3,539	3.36	1.03	97.3	0.01
Anatomy and physiology of the lymphatic system as related to interventions, daily activities, and environmental factors	3,539	3.37	1.03	97.3	-0.01
Adverse effects or complications on the lymphatic system from physical therapy interventions	3,539	3.61	1.05	98.1	0.00
Adverse effects or complications on the lymphatic system from physical therapy interventions used on other systems	3,466	4.01	1.04	99.1	0.00
MUSCULOSKELETAL SYSTEM					
Physical Therapy Examination					
Musculoskeletal system tests/measures, including outcome measures, and their applications according to current best evidence	3,833	4.72	0.56	99.9	**-0.02**
Anatomy and physiology of the musculoskeletal system as related to tests/measures	3,833	4.72	0.55	99.9	0.00
Movement analysis as related to the musculoskeletal system	3,833	4.69	0.55	100.0	0.00
Joint biomechanics and their applications	3,833	4.51	0.69	99.9	-0.01
Physical therapy ultrasound imaging of the musculoskeletal system	3,833	2.74	1.09	87.5	0.00
Foundations for Evaluation, Differential Diagnosis and Prognosis					
Differential diagnoses related to diseases/conditions of the musculoskeletal system	3,705	4.56	0.64	100.0	-0.01
Differential diagnoses related to diseases/conditions of the connective tissue	3,705	4.33	0.76	99.9	-0.02
Musculoskeletal system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis	3,705	4.52	0.65	100.0	-0.01
Connective tissue diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis	3,705	4.29	0.77	99.9	-0.02

	n	M	SD	%Imp	Slope
Non-pharmacological medical management of the musculoskeletal system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,705	3.81	0.86	99.6	-0.01
The impact of pharmacology used to treat the musculoskeletal system on physical therapy management	3,705	3.66	0.88	99.7	0.07
The impact of regenerative medicine (e.g., platelet rich plasma, stem cells) on physical therapy prognosis and interventions related to musculoskeletal diseases/conditions	3,705	3.13	0.95	97.0	0.02
Interventions					
Musculoskeletal system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence	3,833	4.68	0.58	100.0	-0.02
Anatomy and physiology of the musculoskeletal system as related to physical therapy interventions, daily activities, and environmental factors	3,833	4.73	0.52	99.9	-0.02
Adverse effects or complications on the musculoskeletal system from physical therapy interventions	3,833	4.69	0.56	100.0	**-0.02**
Adverse effects or complications on the musculoskeletal system from physical therapy interventions used on other systems	3,466	4.79	0.47	99.9	-0.01
NEUROMUSCULAR & NERVOUS SYSTEM					
Physical Therapy Examination					
Neuromuscular and nervous systems tests/measures, including outcome measures, and their applications according to current best evidence	3,571	4.58	0.65	99.9	-0.01
Anatomy and physiology of the neuromuscular and nervous systems as related to tests/measures	3,571	4.56	0.65	100.0	-0.02
Movement analysis as related to the neuromuscular and nervous systems	3,571	4.56	0.65	100.0	-0.01
Diagnostic electromyography (EMG) using surface electrodes	3,571	2.59	1.01	86.6	0.02
Diagnostic electrophysiology (EMG/NCV) using needle insertion	3,571	2.44	1.03	81.7	0.01
Foundations for Evaluation, Differential Diagnosis and Prognosis					
Differential diagnoses related to diseases/conditions of the nervous system (CNS, PNS, ANS)	3,571	4.27	0.84	99.8	0.00
Nervous system (CNS, PNS, ANS) diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis	3,571	4.37	0.78	99.9	-0.02
Non-pharmacological medical management of the neuromuscular and nervous systems (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,571	3.71	0.91	99.4	-0.01

	n	M	SD	%Imp	Slope
The impact of pharmacology used to treat the neuromuscular and nervous systems on physical therapy management	3,571	3.68	0.92	99.4	0.08
The impact of regenerative medicine (e.g., platelet rich plasma, stem cells) on physical therapy prognosis and interventions related to the neuromuscular and nervous systems	2,326	2.99	1.02	94.2	-0.07
Interventions					
Neuromuscular and nervous systems physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence	3,474	4.61	0.62	99.9	-0.02
Anatomy and physiology of the neuromuscular and nervous systems as related to physical therapy interventions, daily activities, and environmental factors	3,474	4.60	0.62	100.0	-0.01
Adverse effects or complications on the neuromuscular and nervous systems from physical therapy interventions	3,474	4.55	0.66	100.0	**-0.02**
Adverse effects or complications on the neuromuscular and nervous systems from physical therapy interventions used on other systems	3,466	4.78	0.48	99.9	-0.01
Motor control as related to neuromuscular and nervous systems physical therapy interventions	3,474	4.53	0.66	100.0	-0.01
Motor learning as related to the neuromuscular and nervous systems physical therapy interventions	3,474	4.50	0.69	100.0	**-0.03**
INTEGUMENTARY SYSTEM					
Physical Therapy Examination					
Integumentary system tests/measures, including outcome measures, and their applications according to current best evidence	3,369	3.44	0.99	98.2	0.00
Anatomy and physiology of the integumentary system as related to tests/measures	3,369	3.51	0.98	98.8	-0.01
Movement analysis as related to the integumentary system (e.g., friction, shear, pressure, and scar mobility)	3,369	3.91	0.92	99.3	0.01
Foundations for Evaluation, Differential Diagnosis and Prognosis					
Differential diagnoses related to diseases/conditions of the integumentary system	3,369	3.55	0.97	98.6	0.00
Integumentary system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis	3,369	3.56	0.95	98.8	0.01
Non-pharmacological medical management of the integumentary system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,369	3.27	0.99	97.8	0.02
The impact of pharmacology used to treat the integumentary system on physical therapy management	3,369	3.29	1.01	97.4	0.08

	n	M	SD	%Imp	Slope
Interventions					
Integumentary system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence	3,369	3.68	0.98	98.9	-0.01
Anatomy and physiology of the integumentary system as related to physical therapy interventions, daily activities, and environmental factors	3,369	3.75	0.97	99.0	-0.04
Adverse effects or complications on the integumentary system from physical therapy and medical/surgical interventions	3,369	3.93	0.95	99.3	-0.02
Adverse effects or complications on the integumentary system from physical therapy interventions used on other systems	3,466	4.20	0.90	99.7	-0.02
METABOLIC & ENDOCRINE SYSTEMS					
Foundations for Evaluation, Differential Diagnosis and Prognosis					
Differential diagnoses related to diseases/conditions of the metabolic and endocrine systems	3,422	3.63	0.96	98.7	0.03
Metabolic and endocrine system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis	3,422	3.65	0.95	99.0	0.01
Non-pharmacological medical management of the metabolic and endocrine systems (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,422	3.30	0.96	97.6	0.03
The impact of pharmacology used to treat the metabolic and endocrine systems on physical therapy management	3,422	3.34	0.97	97.7	0.08
Interventions					
Metabolic and endocrine systems physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence	3,422	3.64	1.00	98.5	-0.01
Anatomy and physiology of the metabolic and endocrine systems as related to physical therapy interventions, daily activities, and environmental factors	3,422	3.64	1.00	98.4	0.01
Adverse effects or complications on the metabolic and endocrine systems from physical therapy interventions	3,422	3.81	0.99	98.9	-0.01
Adverse effects or complications on the metabolic and endocrine systems from physical therapy interventions used on other systems	3,466	4.01	1.00	99.4	0.00
GASTROINTESTINAL SYSTEM					
Physical Therapy Examination					
Gastrointestinal system tests/measures, including outcome measures, and their applications according to current best evidence (e.g., bowel dysfunction impact questionnaires, Murphy test, Rovsing test, McBurney point sign)	3,369	3.00	1.04	94.0	0.04

	n	M	SD	%Imp	Slope
Anatomy and physiology of the gastrointestinal system as related to tests/measures	3,369	3.07	1.03	95.3	0.03
Movement analysis as related to the gastrointestinal system (e.g., effects of muscular tension or trigger points, positioning for bowel movement)	3,369	3.09	1.06	94.7	0.03
Foundations for Evaluation, Differential Diagnosis and Prognosis					
Gastrointestinal system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis	3,369	3.11	1.04	95.5	0.03
Differential diagnoses related to diseases/conditions of the gastrointestinal system	3,369	3.18	1.06	95.5	0.02
Non-pharmacological medical management of the gastrointestinal system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,369	2.87	0.98	94.2	0.04
The impact of pharmacology used to treat the gastrointestinal system on physical therapy management	3,369	3.02	1.00	95.4	0.10
Interventions					
Gastrointestinal system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence (e.g., positioning for reflux prevention, bowel programs)	3,369	3.16	1.06	95.6	0.02
Anatomy and physiology of the gastrointestinal system as related to physical therapy interventions, daily activities, and environmental factors	3,369	3.27	1.07	96.3	0.01
Adverse effects or complications on the gastrointestinal system from physical therapy interventions	3,369	3.43	1.10	96.7	0.00
Adverse effects or complications on the gastrointestinal system from physical therapy interventions used on other systems	3,466	3.84	1.09	98.7	-0.01
GENITOURINARY SYSTEM					
Physical Therapy Examination					
Genitourinary system tests/measures, including outcome measures, and their applications according to current best evidence	3,329	3.03	1.06	93.9	**0.04**
Anatomy and physiology of the genitourinary system as related to tests/measures	3,328	3.10	1.07	94.4	0.04
Physical therapy ultrasound imaging of the genitourinary system	3,328	2.43	1.03	80.5	0.04
Foundations for Evaluation, Differential Diagnosis and Prognosis					
Genitourinary system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis	3,328	3.01	1.05	93.7	**0.04**
Differential diagnoses related to diseases/conditions of the genitourinary system	3,328	3.10	1.07	94.4	**0.03**

	n	M	SD	%Imp	Slope
Non-pharmacological medical management of the genitourinary system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)	3,328	2.80	1.00	92.0	0.04
The impact of pharmacology used to treat the genitourinary system on physical therapy management	3,328	2.89	1.03	92.5	0.08
Interventions					
Genitourinary system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence (e.g., bladder programs, biofeedback, pelvic floor retraining)	3,328	3.18	1.09	94.7	0.02
Anatomy and physiology of the genitourinary system as related to physical therapy interventions, daily activities, and environmental factors	3,328	3.24	1.10	95.3	0.01
Adverse effects or complications on the genitourinary system from physical therapy interventions	3,328	3.33	1.14	95.4	0.01
Adverse effects or complications on the genitourinary system from physical therapy interventions used on other systems	3,466	3.80	1.13	98.5	0.01
SYSTEM INTERACTIONS					
Foundations for Evaluation, Differential Diagnosis and Prognosis					
Differential diagnoses related to diseases/conditions where the primary impact is on more than one system	3,283	4.29	0.75	99.9	-0.01
Diseases/conditions where the primary impact is on more than one system (e.g., cancer, multi-trauma, sarcoidosis, autoimmune disorders, pregnancy) to establish and carry out plan of care, including prognosis	3,282	4.27	0.76	99.9	-0.01
The impact of co-morbidities/co-existing conditions on patient/client management (e.g., diabetes and hypertension; obesity and arthritis; dementia and hip fracture)	3,282	4.49	0.67	99.9	-0.01
Psychological and psychiatric conditions that impact patient/client management (e.g., grief, depression, schizophrenia)	3,282	4.13	0.83	99.8	0.02
Dimensions of pain (acute or persistent) that impact patient/client management (e.g., psychological, social, physiological, neurological, mechanical)	3,282	4.37	0.73	99.9	0.02
Non-pharmacological medical management of multiple systems (e.g., diagnostic imaging and other medical tests, surgical procedures)	3,282	3.96	0.87	99.9	0.00
The impact of pharmacology used to treat multiple systems, including polypharmacy, on physical therapy management	3,282	3.89	0.91	99.7	0.06

	n	M	SD	%Imp	Slope
EQUIPMENT, DEVICES, & TECHNOLOGIES					
Applications and adjustments, indications, contraindications, and precautions of:					
assistive and adaptive devices/technologies (e.g., walkers, wheelchairs, adaptive seating systems and positioning devices, mechanical lifts)	3,308	4.63	0.66	99.8	0.01
prosthetic devices/technologies (e.g., lower-extremity and upper-extremity prostheses, microprocessor-controlled prosthetic devices)	3,308	4.10	0.96	99.2	0.02
protective, supportive, and orthotic devices/technologies (e.g., braces, helmets, taping, compression garments, serial casts, shoe inserts, splints)	3,308	4.22	0.89	99.7	0.04
THERAPEUTIC MODALITIES					
Applications, indications, contraindications, and precautions of:					
thermal modalities	3,269	3.72	1.16	96.5	-0.03
iontophoresis	3,269	3.03	1.23	89.1	-0.02
electrotherapy modalities, excluding iontophoresis (e.g., neuromuscular electrical stimulation (NMES), transcutaneous electrical nerve stimulation (TENS), functional electrical stimulation (FES), interferential therapy, high-voltage pulsed current)	3,269	3.82	1.07	98.2	-0.03
laser light therapy	3,269	2.79	1.24	83.7	-0.04
LED light therapy	3,269	2.73	1.24	82.0	-0.08
phonophoresis	3,269	2.69	1.27	80.4	-0.03
ultrasound modalities, excluding phonophoresis	3,269	3.18	1.31	88.3	-0.05
mechanical modalities (e.g., mechanical motion devices, traction devices)	3,265	3.69	1.11	97.1	-0.01
biofeedback	3,265	3.46	1.09	96.4	-0.01
diathermy	3,265	2.41	1.27	69.8	0.01
intermittent compression	3,265	3.07	1.17	90.9	0.04
shockwave therapy	3,265	2.30	1.19	69.4	0.03
blood-flow restriction training	380	2.97	1.28	87.1	NA
cupping	380	2.71	1.20	84.5	NA
SAFETY & PROTECTION					
Factors influencing safety and injury prevention (e.g., safe patient handling, fall prevention, equipment maintenance, environmental safety)	3,308	4.76	0.56	99.8	-0.01
The function and implications and related precautions of intravenous lines, tubes, catheters, monitoring devices, and mechanical ventilators/oxygen delivery devices	3,308	4.28	0.89	99.4	**-0.03**
Emergency preparedness (e.g., CPR, first aid, disaster response)	3,308	4.54	0.76	99.7	-0.03
Infection control procedures (e.g., standard/universal precautions, isolation techniques, sterile technique)	3,308	4.65	0.68	99.8	-0.02
Signs/symptoms of physical, sexual, and psychological abuse and neglect	3,308	4.47	0.77	99.8	**-0.03**

	n	*M*	*SD*	*%Imp*	*Slope*
PROFESSIONAL RESPONSIBILITIES					
Standards of documentation	3,296	4.67	0.60	100.0	-0.02
Standards of professional ethics	3,296	4.80	0.49	100.0	-0.03
Standards of billing, coding, and reimbursement	3,296	4.40	0.80	99.8	**-0.05**
Patient/client rights (e.g., ADA, IDEA, HIPAA, patient bill of rights)	3,296	4.67	0.63	100.0	-0.02
Obligations for reporting illegal, unethical, or unprofessional behaviors (e.g., fraud, abuse, neglect)	3,296	4.68	0.61	100.0	-0.03
State and federal laws, rules, regulations, and industry standards set by state and accrediting bodies (e.g., state licensing entities, Joint Commission, CARF, CMS)	3,296	4.56	0.72	99.8	-0.05
Risk management and quality assurance (e.g., policies and procedures, incident reports, peer chart review)	3,286	3.92	0.94	99.4	**-0.03**
Human resource legal issues (e.g., OSHA, sexual harassment)	3,286	3.94	0.96	99.3	-0.02
The roles and responsibilities of the PT, PTA, other healthcare professionals, and support staff	3,286	4.52	0.70	99.9	-0.03
Cultural factors and/or characteristics that affect patient/client management (e.g., language differences, disability, ethnicity, customs, demographics, religion)	3,286	4.27	0.86	99.5	0.00
Socioeconomic factors that affect patient/client management	3,286	4.20	0.87	99.6	0.00
Applications and utilization of health information technology (e.g., electronic medical records)	3,286	4.07	0.92	99.5	0.00
The provision and utilization of telehealth (i.e., the use of telecommunication technologies to provide health care information and services)	1,240	3.43	1.08	96.7	-0.06
TEACHING & LEARNING THEORIES					
Teaching and learning theories and techniques	3,255	3.93	0.99	98.7	0.01
Health behavior change models (e.g., social cognitive theory, health belief model)	3,255	3.69	1.04	97.8	0.05
Communication methods and techniques (e.g., motivational interviewing, health information brochures/handouts, feedback techniques)	3,255	4.11	0.94	99.2	0.01
RESEARCH & EVIDENCE-BASED PRACTICE					
Techniques for accessing evidence (e.g., peer-reviewed publications, scientific proceedings, guidelines, clinical prediction rules)	3,255	4.05	0.93	99.2	0.03
Research methodology and interpretation (e.g., qualitative, quantitative, levels of evidence)	3,255	3.75	1.00	98.4	0.02
Measurement science (e.g., reliability, validity)	3,255	3.82	0.99	98.4	0.03
Statistics (e.g., t-test, chi-square, correlation coefficient, ANOVA, likelihood ratio, effect size, confidence interval)	3,255	3.04	1.10	92.8	0.01
Data collection techniques (e.g., surveys, direct observation)	3,255	3.29	1.06	95.9	0.03

	n	*M*	*SD*	*%Imp*	*Slope*
SKILLS					
Active listening - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times	3,248	4.79	0.49	99.9	0.00
Speaking - Talking to others to convey information effectively	3,248	4.77	0.51	100.0	0.00
Reading comprehension - Understanding written sentences and paragraphs in work related documents	3,248	4.58	0.67	99.8	-0.01
Critical thinking - Using logic and clinical reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems	3,248	4.82	0.47	99.9	-0.01
Social perceptiveness - Being aware of others' reactions and understanding why they react as they do	3,248	4.71	0.56	99.9	-0.01
Time management - Managing one's own time and the time of others	3,248	4.70	0.58	99.9	**-0.01**
Coordination - Adjusting actions in relation to others' actions	3,238	4.53	0.67	99.8	-0.01
Writing - Communicating effectively in writing as appropriate for the needs of the audience	3,238	4.46	0.72	99.8	-0.01
Active learning - Understanding the implications of new information for both current and future problem solving and decision-making	3,238	4.61	0.62	99.9	-0.02
Persuasion - Persuading others to change their minds or behavior	3,238	3.97	0.94	99.0	-0.01
Negotiation - Bringing others together and trying to reconcile differences	3,238	4.08	0.91	99.2	-0.01
Service orientation - Actively looking for ways to help people	3,238	4.34	0.83	99.6	-0.02

Note. Slope values in boldface type are statistically significant ($p < 0.05$).

Appendix G. Final List of Critical Work Activities

PATIENT/CLIENT ASSESSMENT
Information Gathering & Synthesis
Interview patients/clients, caregivers, and family to obtain patient/client history and current information (e.g., medical, surgical, medications, social, cultural, language preference, economic) to…
…establish prior and current level of function/activity
…establish general health status
…identify red flags (e.g., fever, malaise, unexplained weight change) and contraindications
…identify risk factors and needs for preventative measures
…identify patient/client's, family/caregiver's goals, values, and preferences
…determine if patient/client is appropriate for PT
…determine insurance and financial resources and issues (e.g., co-pays, deductibles, insurance limitations)
…determine impact of medications on plan of care (e.g., medication reconciliation, timing of intervention delivery, adherence)
Administer standardized questionnaires (e.g., pain inventory, fall risk assessment)
Review medical records (e.g., lab values, diagnostic tests, imaging, specialty reports, narrative, consults)
Gather information/discuss patient/client's current health status with interprofessional/interdisciplinary team members
Identify signs/symptoms of change in patient/client's health status that require intervention by interprofessional/interdisciplinary team members
Systems Review
Perform screen of the…
…patient/client's current affect, cognition, communication, and learning preferences (e.g., ability to convey needs, consciousness, orientation, expected emotional/behavioral responses)
…patient/client's quality of speech, hearing, and vision (e.g., dysarthria, pitch/tone, use of corrective lenses, use of hearing aids)
…vestibular system (e.g., dizziness, vertigo)
…gastrointestinal system (e.g., difficulty swallowing, nausea, change in appetite/diet, change in bowel function)
…genitourinary system (e.g., changes in bladder function, catheter complications)
…reproductive system (e.g., sexual and/or menstrual dysfunction, menopause status)
…cardiovascular/pulmonary system (e.g., blood pressure, heart rate, respiration rate)
…lymphatic system (e.g., primary or secondary lymphedema)
…integumentary system (e.g., presence of scar formation, skin integrity, discoloration)
…musculoskeletal system (e.g., gross symmetry, strength, range of motion)
…neuromuscular system (e.g., gross coordination, motor function, balance, locomotion, gross sensory function)
Tests & Measures
Cardiovascular/Pulmonary
Select and perform tests and measures of…
…cardiovascular function (e.g., blood pressure, heart rate, heart sounds)
…pulmonary function (e.g., respiratory rate, breathing patterns, breath sounds, chest excursion)
…perfusion and gas exchange (e.g., oxygen saturation)

PATIENT/CLIENT ASSESSMENT
…peripheral circulation (e.g., capillary refill, blood pressure in upper versus lower extremities)
…critical limb ischemia (e.g., peripheral pulses, skin perfusion pressure)
…physiological responses to position change (e.g., orthostatic hypotension, skin color, blood pressure, heart rate)
…aerobic capacity under maximal and submaximal conditions (e.g., endurance, exercise tolerance, metabolic equivalents, perceived exertion)
Anthropometric
Select and perform tests and measures of…
…body composition (e.g., percent body fat, lean muscle mass)
…body dimensions (e.g., height, weight, girth, limb length, head circumference/shape)
Quantify and qualify edema (e.g., pitting, volume, circumference)
Arousal, Attention, & Cognition
Select and perform tests and measures of…
…arousal and orientation (e.g., level of consciousness, time, person, place, situation)
…attention and cognition (e.g., ability to process commands, delirium, confusion)
…communication (e.g., expressive and receptive skills, following instructions)
…recall (including memory and retention)
Nerve Integrity
Select and perform tests and measures of…
…cranial nerve integrity (e.g., facial asymmetry, oculomotor function, hearing)
…spinal nerve integrity (e.g., dermatome, myotome)
…peripheral nerve integrity (e.g., sensation, strength)
…neural provocation (e.g., tapping, tension, stretch)
Environmental & Community Integration/Reintegration (Home, Work, Job, School, Play, & Leisure)
Assess activities of daily living (ADL) (e.g., bed mobility, transfers, household mobility, dressing, self-care, toileting, sexual relations)
Assess instrumental activities of daily living (IADL) (e.g., household chores, hobbies)
Assess ability to perform skills needed for integration or reintegration into the community, work, or school
Assess barriers (e.g., social, economic, physical, psychological, environmental, work conditions and activities) to home, community, work, or school integration/reintegration
Assess safety in home, community, work, or school environments
Assess ability to participate in activities with or without the use of devices, equipment, or technologies
Ergonomics and Body Mechanics
Select and perform tests and measures of…
…ergonomics and body mechanics during functional activities
…postural alignment and position (static and dynamic)
…specific work conditions or activities
…tools, devices, equipment, and workstations related to work actions, tasks, or activities
Functional Mobility, Balance, & Vestibular
Select and perform tests and measures of…
…balance (dynamic and static) with or without the use of specialized equipment

PATIENT/CLIENT ASSESSMENT
…gait and locomotion (e.g., ambulation, wheelchair mobility) with or without the use of specialized equipment
…mobility during functional activities and transitional movements (e.g., transfers, bed mobility)
…vestibular function (e.g., peripheral dysfunction, central dysfunction, BPPV)
Integumentary Integrity
Assess skin characteristics (e.g., continuity of skin color, sensation, temperature, texture, turgor)
Assess wound characteristics (e.g., tissue involvement, depth, tunneling, burn classification, ulcer/injury classification)
Assess scar tissue characteristics (e.g., banding, pliability, sensation, and texture)
Assess activities, positioning, and postures that may produce or relieve trauma to the skin
Assess devices and equipment that may produce or relieve trauma to the skin
Joint Integrity & Range of Motion
Select and perform tests and measures of…
…spinal and peripheral joint stability (e.g., ligamentous integrity, joint structure)
…spinal and peripheral joint mobility (e.g., glide, end feel)
…range of motion (e.g., passive, active, functional)
…flexibility (e.g., muscle length, soft tissue extensibility)
Motor Function
Select and perform tests and measures of…
…muscle tone (e.g., hypertonicity, hypotonicity, dystonia)
…dexterity, coordination, and agility (e.g., rapid alternating movement, finger to nose)
…ability to initiate, modify and control movement patterns and postures (e.g., catching a ball, gait)
…ability to change movement performance with practice (e.g., motor learning)
…movement quality (e.g., purpose, precision, efficiency, biomechanics, kinematics)
Muscle Performance
Select and perform tests and measures of…
…muscle strength, power, and endurance without specialized equipment (e.g., manual muscle test, functional strength testing)
…muscle strength, power, and endurance with specialized equipment (e.g., isokinetic testing, dynamometry)
Neuromotor Development & Sensory Integration
Select and perform tests and measures of…
…acquisition and evolution of motor skills throughout the lifespan
…sensorimotor integration
…developmental reflexes and reactions (e.g., asymmetrical tonic neck reflex, righting reactions)
Reflex Integrity
Select and perform tests and measures of…
…deep tendon/muscle stretch reflexes (e.g., quadriceps, biceps)
…upper motor neuron integrity (e.g., Babinski reflex, Hoffman sign)
…superficial reflexes and reactions (e.g., cremasteric reflex, abdominal reflexes)
Pain & Sensory Integrity
Select and perform tests and measures of…

PATIENT/CLIENT ASSESSMENT
…pain (e.g., location, intensity, frequency, central, peripheral, psychogenic)
…deep sensation (e.g., proprioception, kinesthesia, pressure)
…superficial sensation (e.g., touch, temperature discrimination)
…visceral organ sensitivity and integrity (e.g., palpation, auscultation)
Evaluation & Diagnosis
Interpret each of the following types of data to determine the need for intervention or the response to intervention:
Cardiovascular/pulmonary system
Lymphatic system
Arousal, attention, cognition, and communication
Neuromuscular system
Functional mobility, balance, and vestibular
Musculoskeletal system
Integumentary system
Anthropometric
Gastrointestinal system
Genitourinary system
Need for or use of assistive and adaptive devices/technologies
Need for or use of orthotic, protective, and supportive devices/technologies
Need for or use of prosthetic devices/technologies
Barriers to home, community, work, or school integration/reintegration
Ergonomics and body mechanics
Pain and sensory integrity
ADLs/IADLs and home management
Imaging, lab values, and medications
Electrodiagnostic test results (e.g., electromyography, nerve conduction velocity)
Evaluate the patient/client's ability to assume or resume home, community, work, school, and/or leisure activities
Develop physical therapy diagnosis by integrating system and non-system data
Development of Prognosis, Plan of Care, & Goals
Establish PT prognosis based on information gathered during the examination process
Develop plan of care based on data gathered during the examination process, incorporating information from the patient/client, caregiver, family members, and other professionals
Revise treatment intervention plan based on treatment outcomes, change in patient/client's health status, and ongoing evaluation
Develop objective and measurable goals based on information gathered during the examination process, in collaboration with the patient/client, caregiver, family members, and/or other professionals
Select interventions based on information gathered during the examination process, incorporating information from the patient/client, caregiver, family members, and other professionals
Modify plan of care based on patient/client's resources (e.g., financial, transportation, time, insurance benefits, available technologies)

INTERVENTIONS
Procedural Interventions
Therapeutic Exercise/Therapeutic Activities
Perform and/or train patient/client/caregiver in…
…aerobic capacity/endurance conditioning
…balance, coordination, and agility activities
…body mechanics and postural stabilization techniques
…flexibility techniques
…neuromotor techniques (e.g., movement pattern training, neuromuscular education or re-education)
…relaxation techniques
…strength, power, and endurance exercises
…genitourinary management (e.g., pelvic floor exercises, bladder strategies)
…gastrointestinal management (e.g., bowel strategies, positioning to avoid reflux)
…manual/mechanical airway clearance techniques (e.g., assistive devices, assistive cough, incentive spirometer, flutter valve, percussion, vibration)
…techniques to maximize ventilation and perfusion (e.g., positioning, active cycle breathing, autogenic drainage, paced breathing, pursed lip breathing)
…mechanical repositioning for vestibular dysfunction
…habituation/adaptation exercises for vestibular dysfunction
…postural drainage
Functional Training
Recommend barrier accommodations or modifications (e.g., ramps, grab bars, raised toilet, environmental control units)
Perform and/or train patient/client in…
…the use of environmental modifications (e.g., ramps, grab bars, raised toilet, environmental control units)
…activities of daily living (ADL) (e.g., bed mobility, transfers, household mobility, dressing, self-care, toileting, sexual relations)
…community and leisure integration or reintegration (e.g., work/school/play)
…instrumental activities of daily living (IADL) (e.g., household chores, hobbies)
…mobility techniques
…gross motor developmental progression
…fall prevention and fall recovery strategies
…behavior modification and strategies that enhance functioning (e.g., energy conservation, pacing, pre-activity planning, reminder schedules)
Manual Therapy Techniques
Perform manual lymphatic drainage
Perform spinal and peripheral manual traction
Perform and/or train patient/client/caregiver in soft tissue mobilization (e.g., connective tissue massage, therapeutic massage, foam rolling)
Perform instrument-assisted soft tissue mobilization
Perform peripheral joint range of motion
Perform peripheral mobilization/manipulation (thrust)
Perform peripheral mobilization (non-thrust)

INTERVENTIONS
Perform spinal mobilization (non-thrust)
Perform cervical spinal mobilization/manipulation (thrust)
Perform thoracic and lumbar spinal mobilization/manipulation (thrust)
Apply taping for…
…neuromuscular reeducation
…edema management
…pain management
Equipment & Devices
Fabricate, apply, and/or adjust…
…adaptive devices (e.g., utensils, seating and positioning devices, steering wheel devices)
…protective devices (e.g., braces, cushions, helmets, protective taping)
…supportive devices (e.g., compression garments, corsets, elastic wraps, neck collars, serial casts, short-stretch bandages)
…orthotic devices (e.g., braces, shoe inserts, splints)
Apply and/or adjust…
…assistive devices/technologies (e.g., canes, crutches, walkers, wheelchairs, tilt tables, standing frames)
…prosthetic devices/technologies (e.g., lower-extremity and upper-extremity prostheses, microprocessor-controlled prosthetic devices)
…mechanical neuromuscular re-education devices/technologies (e.g., weighted vests, therapeutic suits, body weight supported treadmill)
…prescribed oxygen during interventions
Train patient/client/caregiver in the use of…
…adaptive devices (e.g., utensils, seating and positioning devices, steering wheel devices)
…assistive devices/technologies (e.g., canes, crutches, walkers, wheelchairs, tilt tables, standing frames)
…orthotic devices (e.g., braces, shoe inserts, splints)
…prosthetic devices/technologies (e.g., lower-extremity and upper-extremity prostheses, microprocessor-controlled prosthetic devices)
…protective devices (e.g., braces, cushions, helmets, protective taping)
…supportive devices (e.g., compression garments, corsets, elastic wraps, neck collars, serial casts, short-stretch bandages)
…mechanical neuromuscular re-education devices/technologies (e.g., weighted vests, therapeutic suits, body weight supported treadmill)
Integumentary Repair & Protection Techniques
Perform and/or train patient/client/caregiver in…
…nonselective debridement (e.g., removal of nonselective areas of devitalized tissue)
…selective enzymatic or autolytic debridement (e.g., removal of specific areas of devitalized tissue)
…negative pressure wound therapy (e.g., vacuum-assisted wound closure)
…application of topical agents (e.g., cleansers, creams, moisturizers, ointments, sealants) and dressings (e.g., hydrogels, wound coverings)
…desensitization techniques (e.g., brushing, tapping, use of textures)
Perform sharp debridement (e.g., removal of specific areas of devitalized tissue)
Recommend topical agents (e.g., pharmacological to physician, over-the-counter to patient) and advanced wound dressings (e.g., negative pressure wound therapy, wound coverings)

INTERVENTIONS
Therapeutic Modalities
Perform and/or train patient/client/caregiver in…
…biofeedback therapy (e.g., relaxation techniques, muscle reeducation, EMG)
…iontophoresis
…electrotherapy modalities, excluding iontophoresis (e.g., neuromuscular electrical stimulation (NMES), transcutaneous electrical nerve stimulation (TENS), functional electrical stimulation (FES), interferential therapy, high-voltage pulsed current)
…cryotherapy (e.g., cold pack, ice massage, vapocoolant spray)
…hydrotherapy (e.g., aquatic exercise, underwater treadmill)
…ultrasound procedures
…hot pack thermotherapy
Mechanical Modalities
Apply and/or train patient/client/caregiver in…
…intermittent pneumatic compression
…assisted movement devices (e.g., dynamic splint, continuous passive motion devices)
…mechanical spinal traction
Non-procedural Interventions
Communication
Discuss physical therapy evaluation findings, interventions, goals, prognosis, discharge planning, and plan of care with…
…physical therapists, physical therapist assistants, and/or support staff
…interprofessional/interdisciplinary team members
…patient/client/caregiver
Provide written, oral, and electronic information to the patient/client and/or caregiver
Documentation
Document…
…examination results
…evaluation to include diagnosis, goals, and prognosis
…intervention(s) and patient/client response(s) to intervention
…patient/client/caregiver education
…outcomes (e.g., discharge summary, reassessments)
…communication with the interdisciplinary/interprofessional team related to the patient/client's care
…rationale for billing and reimbursement
…disclosure and consent (e.g., disclosure of medical information, consent for treatment)
…letter of medical necessity (e.g., wheelchair, assistive equipment, disability parking placard)
…intervention/plan of care for specialized services and settings (e.g., individual education plan, individual family service plan, vocational transition plan)
Assign billing codes for physical therapy evaluation and treatment provided

INTERVENTIONS
Education
Educate patient/client and/or caregiver about…
…the patient/client's current condition and health status (e.g., nature of the condition, prognosis, potential benefits of physical therapy interventions, potential treatment outcomes)
…the role of the physical therapist and/or physical therapist assistant in patient/client management
…lifestyle and behavioral changes to promote wellness (e.g., nutrition, physical activity, tobacco cessation)
…the role of physical therapy in transitional planning (e.g., hospice, palliative care, setting changes)
Educate the healthcare team about…
…the role of the physical therapist and/or physical therapist assistant in patient/client management
…safe patient handling (e.g., injury prevention, ergonomics, use of equipment)
Educate community groups on lifestyle and behavioral changes to promote wellness (e.g., nutrition, physical activity, tobacco cessation)
Participate in the clinical education of students
Patient/client & Staff Safety
Emergency Procedures
Implement emergency procedures (e.g., CPR, AED, calling a code)
Perform first aid
Implement disaster response procedures
Environmental Safety
Perform risk assessment of the physical environment (e.g., barrier-free environment, outlets, windows, floors, lighting)
Prepare and maintain a safe working environment for performing interventions (e.g., unobstructed walkways, equipment availability)
Perform regular equipment inspections and/or maintenance (e.g., modalities, assistive devices)
Infection Control
Perform and/or train patient/client and/or caregiver on appropriate infection control practices (e.g., universal precautions, hand hygiene, isolation, airborne precautions, equipment cleaning)
Research & Evidence-Based Practice
Search the literature for current best evidence
Evaluate the quality of published data
Integrate current best evidence, clinical experience, and patient values in clinical practice (e.g., clinical prediction rules, patient preference)
Design, direct, and/or participate in research activities
Compare intervention outcomes with normative data
Professional Responsibilities
Supervise physical therapist assistant(s) and support personnel (licensed/unlicensed)
Assign tasks to other personnel (licensed/unlicensed) to assist with patient/client care
Discuss ongoing patient care with the interprofessional/interdisciplinary team members
Refer patient/client to specialists or other healthcare providers when necessary
Disclose financial interest in recommended products or services to the patient/client
Provide notice and information about alternative care when the physical therapist terminates provider relationship with the patient/client
Document transfer of patient/client care to another physical therapist (therapist of record)

INTERVENTIONS
Report healthcare providers that are suspected to not perform their professional responsibilities with reasonable skill and safety to the appropriate authorities
Report suspected cases of abuse to the appropriate authority
Report suspected illegal or unethical acts performed by healthcare providers to the relevant authority
Advocate for public access to physical therapy and other healthcare services
Determine own need for professional development
Participate in learning and/or development activities (e.g., journal clubs, self-directed reading, continuing competence activities) to maintain the currency of knowledge, skills, and abilities
Practice within the federal and jurisdiction regulations and professional standards
Participate in professional organizations
Perform community-based screenings (e.g., fall risk, posture, musculoskeletal, flexibility, sports-specific)
Participate in performance improvement and quality reporting activities (e.g., Physician Quality Reporting System, standardized outcomes measurement, application of health informatics)

Appendix H. Final List of Critical Knowledge and Skill Requirements

CARDIOVASCULAR/PULMONARY SYSTEM
Physical Therapy Examination
Cardiovascular/pulmonary system tests/measures, including outcome measures, and their applications according to current best evidence
Anatomy and physiology of the cardiovascular/pulmonary system as related to tests/measures
Movement analysis as related to the cardiovascular/pulmonary system (e.g., rib cage excursion, breathing pattern)
Foundations for Evaluation, Differential Diagnosis and Prognosis
Differential diagnoses related to diseases/conditions of the cardiovascular/pulmonary systems
Cardiovascular/pulmonary system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis
Non-pharmacological medical management of the cardiovascular/pulmonary system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)
The impact of pharmacology used to treat the cardiovascular/pulmonary system on physical therapy management
Interventions
Cardiovascular/pulmonary system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence
Anatomy and physiology of the cardiovascular/pulmonary system as related to physical therapy interventions, daily activities, and environmental factors
Adverse effects or complications on the cardiovascular/pulmonary system from physical therapy interventions
Adverse effects or complications on the cardiovascular/pulmonary system from physical therapy interventions used on other systems
LYMPHATIC SYSTEM
Physical Therapy Examination
Lymphatic system tests/measures, including outcome measures, and their applications according to current best evidence
Anatomy and physiology of the lymphatic system as related to tests/measures
Movement analysis as related to the lymphatic system (e.g., compensatory movement, extremity range of motion)
Foundations for Evaluation, Differential Diagnosis and Prognosis
Differential diagnoses related to diseases/conditions of the lymphatic system
Lymphatic system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis
Non-pharmacological medical management of the lymphatic system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)
Interventions
Lymphatic system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence
Anatomy and physiology of the lymphatic system as related to interventions, daily activities, and environmental factors
Adverse effects or complications on the lymphatic system from physical therapy interventions
Adverse effects or complications on the lymphatic system from physical therapy interventions used on other systems

MUSCULOSKELETAL SYSTEM
Physical Therapy Examination
Musculoskeletal system tests/measures, including outcome measures, and their applications according to current best evidence
Anatomy and physiology of the musculoskeletal system as related to tests/measures
Movement analysis as related to the musculoskeletal system
Joint biomechanics and their applications
Foundations for Evaluation, Differential Diagnosis and Prognosis
Differential diagnoses related to diseases/conditions of the musculoskeletal system
Differential diagnoses related to diseases/conditions of the connective tissue
Musculoskeletal system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis
Connective tissue diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis
Non-pharmacological medical management of the musculoskeletal system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)
The impact of pharmacology used to treat the musculoskeletal system on physical therapy management
The impact of regenerative medicine (e.g., platelet rich plasma, stem cells) on physical therapy prognosis and interventions related to musculoskeletal diseases/conditions
Interventions
Musculoskeletal system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence
Anatomy and physiology of the musculoskeletal system as related to physical therapy interventions, daily activities, and environmental factors
Adverse effects or complications on the musculoskeletal system from physical therapy interventions
Adverse effects or complications on the musculoskeletal system from physical therapy interventions used on other systems
NEUROMUSCULAR & NERVOUS SYSTEM
Physical Therapy Examination
Neuromuscular and nervous systems tests/measures, including outcome measures, and their applications according to current best evidence
Anatomy and physiology of the neuromuscular and nervous systems as related to tests/measures
Movement analysis as related to the neuromuscular and nervous systems
Foundations for Evaluation, Differential Diagnosis and Prognosis
Differential diagnoses related to diseases/conditions of the nervous system (CNS, PNS, ANS)
Nervous system (CNS, PNS, ANS) diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis
Non-pharmacological medical management of the neuromuscular and nervous systems (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)
The impact of pharmacology used to treat the neuromuscular and nervous systems on physical therapy management
The impact of regenerative medicine (e.g., platelet rich plasma, stem cells) on physical therapy prognosis and interventions related to the neuromuscular and nervous systems

Interventions
Neuromuscular and nervous systems physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence
Anatomy and physiology of the neuromuscular and nervous systems as related to physical therapy interventions, daily activities, and environmental factors
Adverse effects or complications on the neuromuscular and nervous systems from physical therapy interventions
Adverse effects or complications on the neuromuscular and nervous systems from physical therapy interventions used on other systems
Motor control as related to neuromuscular and nervous systems physical therapy interventions
Motor learning as related to the neuromuscular and nervous systems physical therapy interventions
INTEGUMENTARY SYSTEM
Physical Therapy Examination
Integumentary system tests/measures, including outcome measures, and their applications according to current best evidence
Anatomy and physiology of the integumentary system as related to tests/measures
Movement analysis as related to the integumentary system (e.g., friction, shear, pressure, and scar mobility)
Foundations for Evaluation, Differential Diagnosis and Prognosis
Differential diagnoses related to diseases/conditions of the integumentary system
Integumentary system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis
Non-pharmacological medical management of the integumentary system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)
The impact of pharmacology used to treat the integumentary system on physical therapy management
Interventions
Integumentary system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence
Anatomy and physiology of the integumentary system as related to physical therapy interventions, daily activities, and environmental factors
Adverse effects or complications on the integumentary system from physical therapy and medical/surgical interventions
Adverse effects or complications on the integumentary system from physical therapy interventions used on other systems
METABOLIC & ENDOCRINE SYSTEMS
Foundations for Evaluation, Differential Diagnosis and Prognosis
Differential diagnoses related to diseases/conditions of the metabolic and endocrine systems
Metabolic and endocrine system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis
Non-pharmacological medical management of the metabolic and endocrine systems (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)
The impact of pharmacology used to treat the metabolic and endocrine systems on physical therapy management

Interventions
Metabolic and endocrine systems physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence
Anatomy and physiology of the metabolic and endocrine systems as related to physical therapy interventions, daily activities, and environmental factors
Adverse effects or complications on the metabolic and endocrine systems from physical therapy interventions
Adverse effects or complications on the metabolic and endocrine systems from physical therapy interventions used on other systems
GASTROINTESTINAL SYSTEM
Physical Therapy Examination
Gastrointestinal system tests/measures, including outcome measures, and their applications according to current best evidence (e.g., bowel dysfunction impact questionnaires, Murphy test, Rovsing test, McBurney point sign)
Anatomy and physiology of the gastrointestinal system as related to tests/measures
Movement analysis as related to the gastrointestinal system (e.g., effects of muscular tension or trigger points, positioning for bowel movement)
Foundations for Evaluation, Differential Diagnosis and Prognosis
Gastrointestinal system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis
Differential diagnoses related to diseases/conditions of the gastrointestinal system
Non-pharmacological medical management of the gastrointestinal system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)
The impact of pharmacology used to treat the gastrointestinal system on physical therapy management
Interventions
Gastrointestinal system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence (e.g., positioning for reflux prevention, bowel programs)
Anatomy and physiology of the gastrointestinal system as related to physical therapy interventions, daily activities, and environmental factors
Adverse effects or complications on the gastrointestinal system from physical therapy interventions
Adverse effects or complications on the gastrointestinal system from physical therapy interventions used on other systems
GENITOURINARY SYSTEM
Physical Therapy Examination
Genitourinary system tests/measures, including outcome measures, and their applications according to current best evidence
Anatomy and physiology of the genitourinary system as related to tests/measures
Foundations for Evaluation, Differential Diagnosis and Prognosis
Genitourinary system diseases/conditions and their pathophysiology to establish and carry out plan of care, including prognosis
Differential diagnoses related to diseases/conditions of the genitourinary system
Non-pharmacological medical management of the genitourinary system (e.g., diagnostic imaging, laboratory test values, other medical tests, surgical procedures)
The impact of pharmacology used to treat the genitourinary system on physical therapy management

Interventions
Genitourinary system physical therapy interventions and their applications for rehabilitation, health promotion, and performance according to current best evidence (e.g., bladder programs, biofeedback, pelvic floor retraining)
Anatomy and physiology of the genitourinary system as related to physical therapy interventions, daily activities, and environmental factors
Adverse effects or complications on the genitourinary system from physical therapy interventions
Adverse effects or complications on the genitourinary system from physical therapy interventions used on other systems
SYSTEMS INTERACTIONS
Foundations for Evaluation, Differential Diagnosis and Prognosis
Differential diagnoses related to diseases/conditions where the primary impact is on more than one system
Diseases/conditions where the primary impact is on more than one system (e.g., cancer, multi-trauma, sarcoidosis, autoimmune disorders, pregnancy) to establish and carry out plan of care, including prognosis
The impact of co-morbidities/co-existing conditions on patient/client management (e.g., diabetes and hypertension; obesity and arthritis; dementia and hip fracture)
Psychological and psychiatric conditions that impact patient/client management (e.g., grief, depression, schizophrenia)
Dimensions of pain (acute or persistent) that impact patient/client management (e.g., psychological, social, physiological, neurological, mechanical)
fNon-pharmacological medical management of multiple systems (e.g., diagnostic imaging and other medical tests, surgical procedures)
The impact of pharmacology used to treat multiple systems, including polypharmacy, on physical therapy management
EQUIPMENT, DEVICES, & TECHNOLOGIES
Applications and adjustments, indications, contraindications, and precautions of:
assistive and adaptive devices/technologies (e.g., walkers, wheelchairs, adaptive seating systems and positioning devices, mechanical lifts)
prosthetic devices/technologies (e.g., lower-extremity and upper-extremity prostheses, microprocessor-controlled prosthetic devices)
protective, supportive, and orthotic devices/technologies (e.g., braces, helmets, taping, compression garments, serial casts, shoe inserts, splints)
THERAPUTIC MODALITIES
Applications, indications, contraindications, and precautions of:
thermal modalities[3]
iontophoresis
electrotherapy modalities, excluding iontophoresis (e.g., neuromuscular electrical stimulation (NMES), transcutaneous electrical nerve stimulation (TENS), functional electrical stimulation (FES), interferential therapy, high-voltage pulsed current)
ultrasound modalities, excluding phonophoresis

[3] The Practice Analysis Task Force commented that thermal modalities is a broad term used to describe a myriad of modalities. The task force requested that hot pack thermotherapy and cryotherapy be separated out from thermal modalities and represented as Critical Knowledge and Skill Requirements. The task force also requested that dry heat thermotherapy should not be included as a Critical Knowledge and Skill Requirement.

mechanical modalities (e.g., mechanical motion devices, traction devices)
biofeedback
intermittent compression
SAFETY & PROTECTION
Factors influencing safety and injury prevention (e.g., safe patient handling, fall prevention, equipment maintenance, environmental safety)
The function and implications and related precautions of intravenous lines, tubes, catheters, monitoring devices, and mechanical ventilators/oxygen delivery devices
Emergency preparedness (e.g., CPR, first aid, disaster response)
Infection control procedures (e.g., standard/universal precautions, isolation techniques, sterile technique)
Signs/symptoms of physical, sexual, and psychological abuse and neglect
PROFESSIONAL RESPONSIBILITIES
Standards of documentation
Standards of professional ethics
Standards of billing, coding, and reimbursement
Patient/client rights (e.g., ADA, IDEA, HIPAA, patient bill of rights)
Obligations for reporting illegal, unethical, or unprofessional behaviors (e.g., fraud, abuse, neglect)
State and federal laws, rules, regulations, and industry standards set by state and accrediting bodies (e.g., state licensing entities, Joint Commission, CARF, CMS)
Risk management and quality assurance (e.g., policies and procedures, incident reports, peer chart review)
Human resource legal issues (e.g., OSHA, sexual harassment)
The roles and responsibilities of the PT, PTA, other healthcare professionals, and support staff
Cultural factors and/or characteristics that affect patient/client management (e.g., language differences, disability, ethnicity, customs, demographics, religion)
Socioeconomic factors that affect patient/client management
Applications and utilization of health information technology (e.g., electronic medical records)
The provision and utilization of telehealth (i.e., the use of telecommunication technologies to provide health care information and services)
RESEARCH & EVIDENCE-BASED PRACTICE
Techniques for accessing evidence (e.g., peer-reviewed publications, scientific proceedings, guidelines, clinical prediction rules)
Research methodology and interpretation (e.g., qualitative, quantitative, levels of evidence)
Measurement science (e.g., reliability, validity)
Statistics (e.g., t-test, chi-square, correlation coefficient, ANOVA, likelihood ratio, effect size, confidence interval)
Data collection techniques (e.g., surveys, direct observation)