Practice Analysis Survey
Physical Therapy for Performing Arts
Technical Report

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Jennifer M. Gamboa, MPT, OCS
Marshall Hagins, PhD, PT
Tara Jo Manal, MPT, OCS, SCS

INTRODUCTION

As the profession of physical therapy moves towards a more traditional medical model of education, there is a growing need to identify and develop opportunities for post-professional clinical and didactic education. Such opportunities are typically found in clinical residencies and fellowships. The American Physical Therapy Association currently has eleven credentialed residency programs and six credentialed fellowship programs. A clinical residency is a planned program of post-professional clinical and didactic education for physical therapists that is designed to substantially advance patient care skills in a defined area of clinical practice. A clinical fellowship is designed for a board-certified physical therapist or a graduate of a residency to focus on a subspecialty area of clinical practice, education, or clinical research. According to the American Physical Therapy Association (APTA) guidelines, a clinical residency may be in an area of specialty or subspecialty, while a clinical fellowship must be in an area of subspecialty (1).

Physical therapy for performing artists is an area of clinical practice that is a subspecialty of orthopaedic, manual, and sports physical therapy. Because performing arts physical therapy crosses so many specialty areas, there is currently no single post-professional credentialing exam or educational experience that would adequately prepare a physical therapist for a subspecialty in performing arts medicine. Most therapists currently practicing in the performing arts subspecialty do so with a significant amount of on-the-job training. Currently, there are no clear guidelines on how to systematically gain the knowledge, skills, and abilities (KSA's) necessary to successfully treat this patient population.

In order to develop guidelines for becoming a specialist in performing arts physical therapy or to design curriculum for potential post-professional performing arts clinical residency and/or fellowship opportunities, the standard of practice must be clearly defined. A practice analysis is the process by which the scope of practice, as well as, the unique KSA's required for a particular specialty or subspecialty are defined. In the spring of 2001, the Performing Arts Special Interest Group (PASIG) began a practice analysis to define the scope of performing arts physical therapy and identify the specific and unique KSA's necessary for successful clinical practice in the performing arts subspecialty.

METHODS

This project used a descriptive research design following a practice analysis plan similar to the one described in the technical report for the first National Practice Analysis Study for Orthopaedic Clinical Specialists in Physical Therapy (2). This 15-step plan and its associated timetable is outlined in Table 1.

Grant Application, Project Planning, and Design

A grant application was submitted to the Orthopaedic Section of the American Physical Therapy Association in August 2000, and approved in October 2000. The application outlined the tasks, proposed timeline, and an estimated budget for the practice analysis. The budget for the practice analysis is presented in Appendix A.

Table 1. Practice Analysis Project Plan for Physical Therapy for Performing Arts

Task	Timeline
1. Grant Application, Project Planning and Design	August - October 2000
2. Conduct Literature/Document Review	November-December 2000
3. Establish a National Advisory Group (NAG) of Subject Matter Experts	December 2000 - January 2001
4. Meet with NAG to draft KSA's for Performing Arts Physical Therapy	March 2001
5. Develop Preliminary Competencies based on KSA's and Review by NAG	May – August 2001
6. Develop Draft of Survey Instrument	September 2001
7. Pilot Survey Instrument	November 2001
8. Grant Application and Approval for Continuation of Funding	January-April 2002
9. Revisions to Survey Instrument based on Pilot data	June-August 2002
10. Administer Survey and Follow-up	September-October 2002
11. Collection and Analysis of Data by Psychometric Consultants, Knapp and Associates International, Inc.	November-December 2002
12. Draft Competency Document and Review by NAG	January – March 2003
13. Write Final Competency Document and Submit to Orthopaedic Section	June 2003
14. Draft Technical Report	September-October 2003
15. Submit Final Copy of Technical Report to the Orthopaedic Section	November 2003

Literature/Document Review

A literature/document review was performed to provide an overview of the following topics.

- Expert Practice in Physical Therapy (3), (4)
- Clinical Reasoning in Manual Therapy (5)
- Non-Clinical Competencies (6), (7)
- Developing Expert-Based Decision Support Systems (8)
- Practice Analysis Survey Instruments (9)
- Descriptions of Advanced Clinical Practice for Orthopaedic, Sports, Neurologic, and Orthopaedic Manual Physical Therapy (10)-(12)

The review of the literature did not reveal any practice analysis study or body of universally agreed upon competencies for physical therapy for performing artists.

Establish a National Advisory Group of Content Experts

A NAG was established to identify the KSA's required for practice in performing arts physical therapy, to pilot the survey once the instrument was developed by a steering committee, and to review/comment on the results of the final survey. A list of 31 potential members was compiled in the fall of 2000 using a purposive sampling technique. Criteria for selection are detailed in Table 2.

Final selection of the 16 members was based on meeting the established criteria, as well as, availability for specified meeting dates. An alternate list of an additional six content experts was also generated. Although the alternates were not available for specified meeting dates, they were available for phone consults. In addition to the subject matter experts, a group facilitator was also retained to help guide the NAG through the process of generating a list of KSA's. See Appendix B for a list of the members, alternates, and facilitator of the National Advisory Group.

Table 2. Criteria for Selection of National Advisory Group Members

Nationwide geographical distributions
Diversity of Practice Settings
Diversity of Post-professional Training
Experience in Performing Arts Physical Therapy (at least five years, at least 20% of patient population)
Diversity of Clinicians, Educators, and Researchers
Contribution to the Advancement of Physical Therapy in the Performing Arts Subspecialty

Develop the Draft Competencies and Survey Instrument

The NAG met with a group facilitator in the spring of 2000. Using a consensus building process, the NAG developed a list of KSA's that physical therapists treating performing artists must possess. Based on the NAG-generated KSA's, a review of the literature, and the *Guide to Physical Therapist Practice* (13), a steering committee (formed by the principal investigator and two members of the NAG) drafted a list of 201 knowledge and responsibility line items describing physical therapists practicing in the performing arts subspecialty. During

this process, the steering committee decided that any description of specialized practice must be comprehensive and describe the specialty (or subspecialty) in its entirety. Thus, general knowledges and responsibilities as well as those unique to performing arts physical therapists were included in the list of competencies.

The steering committee converted the list of competencies into a survey instrument that was organized to reflect the *Guide to Physical Therapist Practice*, and designed to answer the following research question: What clinical competencies (i.e., knowledges and responsibilities) are required for physical therapists to practice in the performing arts subspecialty?

Pilot Study of the Survey Instrument

To improve the content and face validity of the survey instrument, the members of the NAG plus the six alternates were asked to pilot the survey in the fall of 2001. Their responses were used to validate the knowledge and responsibility competencies, validate the scales being used to rate each competency, determine the length of time for taking the survey, and identify any additional problems with instructions or procedures.

Based on their responses, the instrument was revised to decrease redundancy, improve the clarity of the scales used to rate each item, and simplify the instructions for filling out the survey.

Final Version of the Survey Instrument

Production of the final version of the survey instrument was delayed by an interruption of funding. However, final revisions and modifications were made based on the pilot group's comments during the summer of 2002. The final survey instrument consisted of four sections: technical responsibilities, non-technical responsibilities, knowledge areas, and background information (demographics).

Technical Responsibilities

This section was designed to ascertain what clinical skills performing arts physical therapists execute in their daily professional roles. Eighty-two competencies were organized into eight practice dimensions, including:

1. Emergency Care
2. Patient Examination
3. Evaluation
4. Diagnosis
5. Prognosis
6. Intervention
7. Reexamination
8. Outcomes

Respondents were asked to rate the frequency with which each responsibility was performed on a 0 to 4 Likert Scale (0=never, 1=less than once per month, 2=monthly, 3=weekly, 4=daily). Whether or not respondents performed a specific task, they were also asked to rate criticality on a 0 to 3 Likert Scale (0=not critical, 1=minimally critical, 2=moderately critical, 3=extremely critical).

Non-technical Responsibilities

This section was designed to assess what other professional responsibilities are performed on a routine basis by clinicians in performing arts subspecialty. Fifteen competencies were organized into five non-technical dimensions, including:

1. Prevention and Promotion of Health, Wellness, and Fitness
2. Education
3. Critical Inquiry

4. Professional Conduct
5. Administration

Non-technical responsibilities were assessed using the same Likert Scales as for technical responsibilities.

Knowledge Areas

Forty-four knowledge competencies were identified as part of performing arts physical therapy practice. These competencies were organized into seven knowledge dimensions, including:

1. Human Anatomy, Physiology and Pathophysiology
2. Movement Science
3. Orthopaedic Medical/Surgical Interventions
4. Evidence-Based Theory and Practice
5. Resources/Laws/Arts Organizations
6. Demands of Art Forms
7. Typical Presentation of Individual Performers

Respondents were asked to rate frequency and criticality as was done in the technical and non-technical responsibilities sections. In this section, however, respondents were also asked to rate level of judgment using a 0 to 3 Likert Scale (0=not used in practice, 1=recall [ability to recall or recognize specific information only], 2=application [ability to comprehend, interpret or apply knowledge to new or changing situations], 3=analysis [ability to analyze information, put information together to arrive and a solution, and/or evaluate the usefulness of that solution]). At the end of this section, respondents were also given an opportunity to comment or list any other important responsibilities or knowledges that should have been included.

Background Information

The information gathered in this section of the survey was collected in two ways. Closed-ended, fixed-response questions gathered information about geographic location, primary practice setting, years of experience, level of education and/or specialty certifications, percentage of performing arts clientele, membership in other professional organizations, and necessity to treat across interstate lines. Open-ended responses gathered

information about affiliations with specific performing arts organizations as well as research interests (current and future).

Administration of the Survey Instrument

A convenience sample was performed using mailing lists acquired from three groups of healthcare professionals whose explicit mission is to increase the health of performers. The survey was limited to physical therapists within these groups practicing within the United States. In addition, members of the NAG identified a small number of physical therapists within the United States whose practice primarily involves treating performers, but who do not belong to one of the three groups. The following groups were sampled:

1. Performing Arts Special Interest Group of the Orthopaedic Section of the APTA
2. International Association for Dance Medicine and Science (non-redundant members with PASIG only)
3. Performing Arts Medicine Association (non-redundant members with PASIG only)
4. Other Physical Therapists not members of the above groups identified by NAG members with significant experience treating performers

Sample solicitation included letters by direct mail, email announcements to Orthopaedic section members, and verbal announcements at professional meetings. A total of 650 performing arts physical therapists were solicited.

Five hundred and fifty-five packets were sent out via United States mail, and 95 were distributed via electronic mail.

The Survey Packet

Each survey packet contained the survey itself, as well as, a letter of explanation that addressed the purpose of the study, assurances of confidentiality, and instructions for returning the survey instrument.

Follow-Up Mailing

Approximately two weeks after the initial mailing, a follow-up postcard was sent to members of the entire sample. The purpose of the postcard was to encourage completion of the survey, as well as, ensure that all individuals had, indeed, received a survey. Two electronic mail reminders were also distributed at four and six-week intervals via the Orthopaedic section to encourage responses and capture additional participants.

Data Analysis

The psychometric consultants reviewed all raw data and prepared the data set layout for analysis. Data were entered for analysis using the SAS statistical package. Means and standard deviations were calculated for each competency and then rank ordered. Thus, the mean responses for responsibilities were rank ordered by frequency and then again by criticality, while the mean responses for knowledge areas were rank ordered by frequency, then by criticality, and then by level of judgment.

RESULTS

Of the 650 surveys distributed, 93 were returned. Of those returned, 10 had to be thrown out because of significant portions of missing data. Thus, the actual response rate was 13%.

Demographic Information

A description of the survey respondents is shown in Tables 3-15. The greatest proportions of respondents are from the Northeast and the West, and most practice in an outpatient setting. Forty-six percent of the respondents have ten or fewer years of experience, while fifty-five percent have eleven or more years of experience. The majority of respondents have between four and ten years of experience treating performing artists. Most respondents have a bachelor's or master's degree in physical therapy with no additional specialty certification. Of those who do have specialty certifications, most are Orthopaedic Certified Specialists, followed by Manual Therapy and Pilates. Most respondents were also members of the American Physical Therapy Association, the Orthopaedic Section, and the Performing Arts Special Interest Group. Forty-four percent of the respondents were also members of the International Association of Dance Medicine and Science.

Among the respondents, the performing artist client load was typically between one and forty percent of the respondent's total patient population. However, eleven percent of the respondents treated performing artists between eighty-one and one hundred percent of the time. Dancers comprise the largest group of performing artists treated in our sample, followed distantly by musicians and ice skaters. Forty-six percent of our respondents essentially treat a single type of performing artist patient (40% treat dancers exclusively; 5% treat musicians exclusively, and 1% treat figure skaters exclusively), while the remainder treat a mix of performing artist patient types. Fifty percent of the respondents have affiliations with a specific performing arts organization, and most of those are dance companies. Thirteen percent of our respondents must cross state lines to practice as they provide services to touring companies.

Open-ended responses to questions about research interests are summarized in Tables 15 and 16. The two largest groups of performing artists for which evidence is currently being pursued are dancers and musicians.

Table 3: Geographic Region of Major Portion of Professional Practice

Geographic region	% of respondents
Northeast	26
West	23
Mid-Atlantic	18
Central	18
South	11
Northwest	5

Note: Because percentages were rounded to the nearest whole number, total column percentages may not always add up to 100%

Table 4: Primary Practice Setting

Practice setting	% of respondents
Private outpatient office or group practice	52
Health system or hospital-based outpatient facility or clinic	26
Academic institution (postsecondary)	11
School system	2
Acute care hospital	1
Other (Primary response -- on-site/on tour with company or ballet school)	7

Note: Because percentages were rounded to the nearest whole number, total column percentages may not always add up to 100%

Table 5: Total Years Practicing Physical Therapy

Number of years	% of respondents
0-3	20
4-10	26
11-20	24
21 or more	31

Note: Because percentages were rounded to the nearest whole number, total column percentages may not always add up to 100%

Table 6: Total Years Experience Treating Performing Artists

Number of years	% of respondents
0-3	29
4-10	40
11-20	24
21 or more	6

Note: Because percentages were rounded to the nearest whole number, total column percentages may not always add up to 100%

Table 7: Highest-level Educational Degree Earned

Educational degree	% of respondents
M.P.T./M.S.P.T.	43
P.T.	31
Ph.D.	10
M.H.Sc.	5
D.P.T.	4
Other (Primary response – master's degrees in other specialty areas)	7

Note: Because percentages were rounded to the nearest whole number, total column percentages may not always add up to 100%

Table 8: Specialty Certifications Held by Respondents

Specialty certification	% of respondents
None	62
Orthopaedic Certified Specialist (OCS)	15
Manual Therapy	10
Sports Certified Specialist (GCS)	1
Pediatric Certified Specialist (PCS)	1
Other (Primary responses –Pilates, Certified Strength and Conditioning Coach)	10

Note: Because percentages were rounded to the nearest whole number, total column percentages may not always add up to 100%

Table 9: Organizations of which Survey Respondents are Members

Organization	% of respondents
American Physical Therapy Association	80
American Physical Therapy Association – Orthopaedic section	76
Performing Arts Special Interest Group	69
International Association for Dance Medicine and Science	44
Performing Arts Medicine Association	14
Other (Primary responses – Sports Section, APTA; ACSM, Pilates Method Alliance)	19

Note: Because percentages were rounded to the nearest whole number, total column percentages may not always add up to 100%

Table 10: Percentage of Client Load who are Performing Artists

Percentage of patients	% of respondents
0	5
1-20	53
21-40	16
41-60	7
61-80	8
81-100	11

Note: Because percentages were rounded to the nearest whole number, total column percentages may not always add up to 100%

Table 11: Types of Performing Artists Treated by Respondents (as a Percentage of Overall Performing-Artist Patients Treated)

Type of performing artist	Mean % rating
Dancers	67
Musicians	27
Ice skaters	24
Vocalists	17
Gymnasts	14
Other (Primary response – actors)	15

Note: Because percentages were rounded to the nearest whole number, total column percentages may not always add up to 100%

Table 12: Exclusivity of Patient Type within a Performing Arts Practice

Patient type comprising 90 to 100% of the Performing Artist Load	% of respondents
Dancers	40
Musicians	5
Ice skaters	1
Vocalists	0
Gymnasts	0

Note: Total column percentages do not add up to 100% because only 46% of the respondents treated a single type of performing artist exclusively.

Table 13: Percentage of Respondents Who Regularly Work With Performing Arts Companies/Groups

Performing arts organization	% of respondents
Performing arts company (32 dance companies including Broadway shows, 10 dance schools, 5 university dance departments, 4 symphonies/orchestras, 2 university music departments)	50
None	50

Table 14: Percentage of Respondents Who Travel With a Performing Arts Company/Group and Practice Across State Lines

Practice across state lines?	% of respondents
Yes	13
No	87

Table 15. Partial List of Ongoing Topics of Performing Arts-Specific Research

Dance
Analysis of intrinsic & extrinsic risk factors in dancers.
Biomechanics of dance movement in healthy dancers
Conditioning programs for performance enhancement.
Effect of age, training, injury on biomechanics of dance movement
Effect of comprehensive management on incidence, time loss & cost of injuries in professional dancers
Effectiveness of Pilates training
Injury reporting/analysis
Nutritional habits of adolescent pre-professional dancers
Pathomechanics of anterior hip pathology and psoas injuries
Quantification of movement improvements with ACL repairs
Screening programs for dancers
Music
Healthcare pattern usage in musicians.
Injury pattern by instrument
Injury risk factors for music students.
Prevention of musician injuries.
Other
Effects of comprehensive case management on injury rates and workers compensation rates.

Table 16. Partial List of Interests for Future Research in Performing Arts Physical Therapy

Dance
Biomechanical and EMG analysis of dance movements
Causes and epidemiology of os trigonum
Effectiveness of pre-season dance screenings and the development of a valid screening tool for dancers (to predict likelihood of injury). .
Effectiveness of proprioceptive retraining for foot/ankle injuries compared to other PT
Epidemiological study of dance injuries
Flexor Hallicus Longis tenosynovitis in dancers
Foot/ankle movement tools (screening outcomes & comparison to injuries)
Hip movement dysfunction relative to anterior hip syndrome.
Impact of injury prevention education for undergraduate dance majors on change in attitudes & incidence of injury
Increasing AROM in ballet dancers' hips.
Kyphosis/scoliosis curvature correction
Lower quarter development in pediatric – adolescent dancers
Lumbopelvic movement patterns (norm & pathological) in dancers
Muscle imbalances in dancers
Patellofemoral pain in dancers
Pelvic floor function/dysfunction in dancers
Pointe shoe research (more directed at dancer safety, rather than aesthetics)
Posterior Tibialis tendonitis in dancers
Relationship of body type to injury rates in dancers
Relationship of teaching style to injury rates in dancers
Shoulder mechanics in port de bras
SI dysfunction in dancers
Talar compression syndrome in dancers
Use of Pilates and Gyrotonics in rehabilitation of low back pain for dancers
Music
Adaptive devices for music students
Biomechanics of piano playing & identifying movements or lack of movements which contribute to injury
Carpal tunnel syndrome in pianists,–
Cervical spine especially in musicians
Injuries among harpists, including shoulder impingement
Over use injuries in instrumental musicians
Tendonitis and focal dystonia in pianists
Thoracic outlet syndrome in musicians –.
Figure Skating
Boot design in figure skating
Ice skating injuries – frequency, location, prevention, treatment
Other
Acupuncture/pressure & pain control
Integrating complementary and alternative therapies in acute & chronic performance rehabilitation
Neuromuscular re-education modalities

Analysis of Professional Responsibilities

Table 17 displays the description of the Likert scales that was provided to the subjects with the survey and defines the meanings of frequency, criticality, and level of judgment. Only frequency and criticality were used for responsibilities, while frequency, criticality, and judgment were used for knowledges. The summary of means and standard deviations for responsibilities and knowledges are presented in Appendices C and D, respectively. The mean values found in these appendices are displayed graphically in Figure 1 (Appendix C) and Figure 2 (Appendix D) to facilitate general comprehension of the findings.

As can be viewed in Figure 1, the mean values for responsibility generally remained above a level "2". For frequency, this implies that the responsibility occurs at least monthly. For criticality, this implies that the responsibility was at least moderate. However, there were eleven mean values below "2" for frequency and five mean values below "2" for criticality. All survey items for responsibility whose mean value was lower than a "2" are displayed in Table 18.

For knowledges, Figure 2 indicates that the mean values are generally above a level "2"—again suggesting that frequency occurs at least monthly and that criticality was at least moderate for these items. In the area of knowledges, there is the additional category of judgment. A mean score of "2" implies that the knowledge was needed at least at the level of application. Across all three categories within knowledges there were eighteen mean values that were lower than a "2". All survey items with knowledges whose mean value was lower than a "2" are displayed in Table 19.

Table 17. Summary of Likert Scales used for rating all survey items.

FREQUENCY	CRITICALITY	LEVEL OF JUDGMENT*
How frequently does the performing arts physical therapist use this knowledge? (0) Never (1) Less than once per month (2) Monthly (3) Weekly (4) Daily	Criticality refers to the level at which a performing arts specialist does an activity more efficiently and effectively than another practitioner treating performing arts patients. For optimal patient care outcomes, how critical is this knowledge to performing arts specialty practice? (0) Not critical (1) Minimally critical (2) Moderately critical (3) Extremely critical	At what level is this knowledge used? (0) Not used in practice (1) Recall (requires ability to recall or recognize specific information only) (2) Application (requires ability to comprehend, interpret or apply knowledge to new or changing situations) (3) Analysis (requires ability to analyze information, put information together to arrive at a solution, and/or evaluate the usefulness of the solution)

*Only used for rating knowledge areas only.

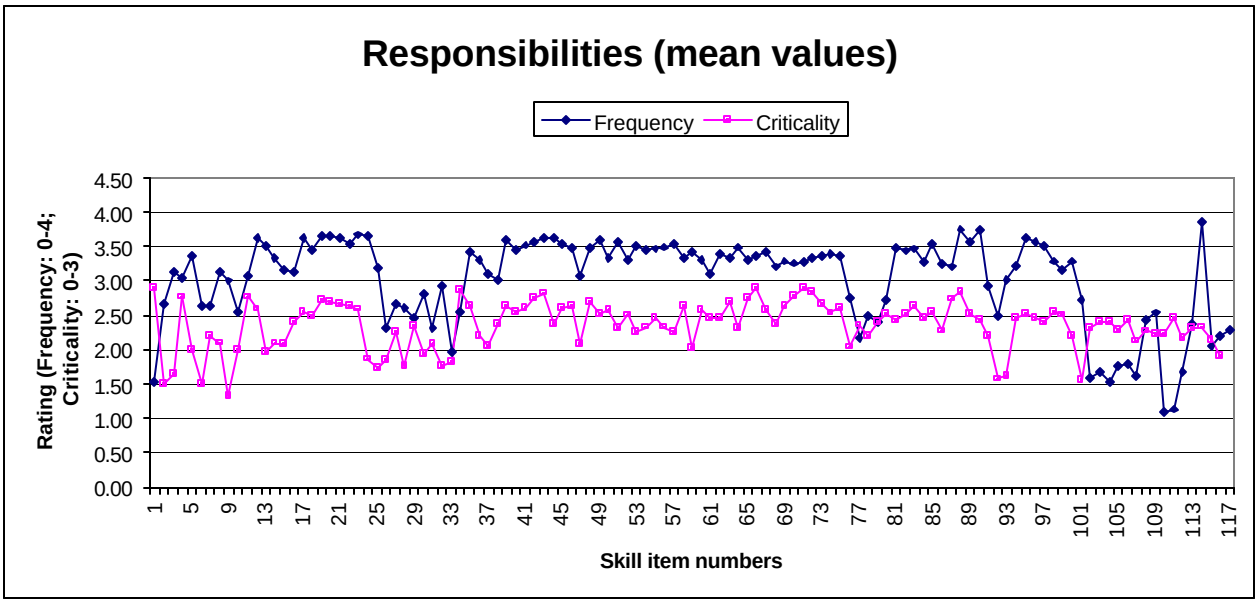

Figure 1. Summarized Frequency and Criticality Data for Professional Responsibilities.

Table 18. Mean Scores for Responsibilities Falling Below 2

Type of Ranking	Scores below 2	Description of Competency
Frequency	1.10	Contribute to performing arts physical therapy body of knowledge by performing some form of clinical research (e.g., case studies and clinical trials) and/or sharing observations through presentations or other related activities
	1.13	Identify research needs within the field of performing arts, evaluate outcomes data and assess new concepts and technologies
	1.53	Recognize injuries and illnesses that require emergency medical intervention and provide emergency care, management, transport, and referral as appropriate
	1.54	Educate and collaborate with management regarding the impact of organizational structure (e.g., rehearsal schedule, lay-off periods, break periods) and practice/performance environment (e.g., floor/surface, temperature) on health of performers
	1.60	Perform outcomes data collection for use in statistical reports
	1.61	Educate other health care and performing arts professionals/administrators, and the public at large, as to the scope and role of physical therapists in the performing arts and the injury prevention needs of performers
	1.67	Plan, coordinate and administer preparticipation and ongoing screening activities for identification of lifestyle factors (e.g., diet, smoking, substance abuse), performance/training place factors (e.g., seating arrangements of orchestra, floor/surface conditions, temperature) and individual neuromusculoskeletal factors (strength, power, endurance, flexibility) that may lead to increased risk for health problems or preclude performers participation
	1.68	Maintain current knowledge of performing arts physical therapy techniques, methods, and theories as well as current professional/medical-legal issues as they pertain to performing arts physical therapy through attendance at professional education venues and where current research is reviewed/reported
	1.75	Prescribe and conduct programs in prevention using individual and group training (e.g., strengthening, stretching, posture, balance, endurance), ergonomic redesign, and education
	1.79	Contribute to the professional development of other physical therapists by teaching and mentoring
	1.96	Autonomic nervous system (e.g., vasomotor instability, excessive or absent swelling, pupil constriction)
Criticality	1.33	Identify familial health risks (e.g., history of cancer)
	1.51	Obtain data on living environment and community characteristics
	1.51	Obtain general demographic information
	1.65	Obtain social history (e.g., cultural beliefs and support systems)
	1.73	Aerobic capacity and endurance: assess aerobic capacity in relationship to performance requirements (e.g., dyspnea perceived exertion, heart rate)

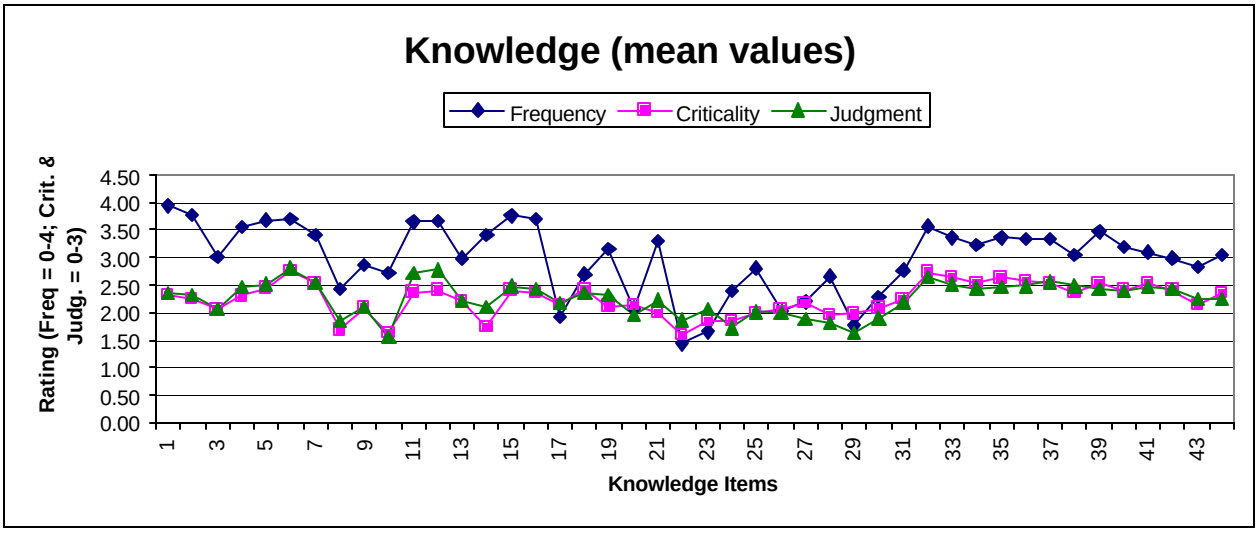

Figure 2. Summarized Frequency, Criticality, and Judgment Data for Knowledge Areas

Table 19. Mean Scores for Knowledges Falling Below 2

Type of Ranking	Scores below 2	Description of Competency
Frequency	1.44	Research methods and design
	1.65	Methods of analysis of research findings applicable physical therapy for performing artists
	1.75	Other organizations devoted to performing arts healthcare (e.g. IADMS, PAMA, etc)
	1.92	Emergency first aid procedures and interventions
Criticality	1.58	Research methods and design
	1.63	Basic pharmacology
	1.68	Imaging studies and ancillary tests
	1.74	Evidence-based theory and practice relative to modalities
	1.84	Community and medical resources
	1.85	Methods of analysis of research findings applicable physical therapy for performing artists
	1.96	Alternative and complimentary healthcare providers
	1.97	Other organizations devoted to performing arts healthcare (e.g. IADMS, PAMA, etc)
	1.99	Multiple methods, styles and levels of communication and learning
Judgment	1.55	Basic pharmacology
	1.62	Other organizations devoted to performing arts healthcare (e.g. IADMS, PAMA, etc)
	1.72	Community and medical resources
	1.80	Alternative and complimentary healthcare providers
	1.84	Imaging studies and ancillary tests
	1.85	Research methods and design
	1.87	Organizational structure of performing arts management and venues (e.g., artistic director, conductor, teachers, off-site physician)
	1.90	Adaptive, supportive equipment and supplies available to the performing arts community

	1.97	Performing arts functional scales
	1.98	Alternative pathways for provision and reimbursement of healthcare services within the performing arts settings (e.g., direct payment of services from company management)

DISCUSSION

The NAG was asked to review the results of the survey, and, as subject matter experts, provide input as to what items should be included or excluded from a final Description of Specialized Practice (DSP). There are no standard decision rules that dictate how to interpret the results of the survey. Ultimately, the NAG wanted to create a DSP that fulfilled two purposes: 1) To reflect the genuine skills and knowledge possessed by physical therapists who currently treat performing artists, and 2) to describe the skills and knowledge necessary for future practice in an environment where therapists have increasing responsibilities for autonomous practice.

The majority of items in the survey had high mean values for frequency, criticality, and, where applicable, level of judgment. Almost all responsibilities occur at least monthly. There were eleven exceptions under responsibilities (Table 18), although these items occurred more than "never" and less than "monthly". After viewing the specific items that occur infrequently, the NAG agreed that infrequent does not mean unimportant. For example, emergency first aid may be performed infrequently, but it is extremely important. In terms of criticality, no responsibility or knowledge item was ranked as low as minimally critical. Similar arguments can be made for the responses for frequency and criticality responses for knowledge. As for level of judgment associated with knowledges, Figure 2 shows that "criticality" and "judgment" generally received very similar ratings on each item. It may be that the distinction between these two constructs was not well perceived. At any rate—the "judgment" values show that the majority of items require judgment that at least requires interpretation, integration, and application to new and/or changing situations. Based on the generally high scores of all items, and the desire to describe the skills and knowledge necessary for future practice in an environment where therapists have increasing responsibilities for autonomous practice, the NAG consensus was to include all items in the final DSP.

While it was important to include all items in the final description of practice, Table 20 summarizes those competencies unique to treating performing arts clients.

Table 20. Competencies unique to treating Performing Artists

Technical Professional Responsibilities
Emergency Care executed backstage.
Patient Examination • Obtain a history that includes: o Data regarding performance requirements and occupational demands (e.g., training, touring, performing demands) o Ergonomic considerations including temperature of performance space, costumes, footwear, instrument type, flooring, constraints to movement o Skill/experience level of the performer o Use of adaptive devices and/or modifications of costumes or instruments o Health status data that includes psychosocial factors of performance anxiety, performance organization politics and expectations, and body perception relative to aesthetic demands. • Conduct a physical exam to collect data regarding: o Ergonomics and body mechanics related to performer's specific artform. o Environmental hazards/health and safety risks to include training duration/intensity as well as recent changes in training/performance/rehearsal schedule or repertoire. o Balance during static and dynamic performance-specific activities. o Performance specific functional tests to determine performer's ability and readiness to return to performance-specific demands. o Effectiveness of assistive devices or adaptive equipment used during performance activities (e.g., instrument, costume, or footwear modifications). o Performer's ability to demonstrate the skillful and efficient assumption, maintenance, modification, and control of performance-specific postures and movement patterns. o Abnormal muscle activation patterns during performance-specific motion. o Alignment and posture during performance-specific activities. o Bony and structural asymmetries in performance specific positions. o Available active and passive range of motion compared to expected range with respect to performance specific requirements.
Evaluation • Determine relevance of biomechanical demands of performance as potentially related to the chief complaint. • Correlate history and physical examination findings to the knowledge of specific epidemiologic injury characteristics in the performing arts. • Devlop impairment list to guide physical therapy interventions to improve performer specific function.
Prognosis • Determine the performer's ability to continue participation without further injury. • Determine need for continuance, modification or discontinuance of training and/or performance • Determine performance-specific criteria necessary to return to maximum participation in the respective art form (e.g., 90 minutes of pointe work without modification) • Predict optimal level of improvement in performance-specific function and the amount of time needed to reach that level.

Table 20. Competencies unique to treating Performing Artists (Continued)

Intervention • Collaborate and coordinate with performance organization regarding performer's care, expected functional outcomes, and timeline for return to performance. • Collaborate with appropriate artistic support staff and/or family regarding modifications of art form to achieve desired outcomes. • Coordinate with insurance provider regarding performer's case management. • Actively engage cooperation of performer and associated artistic staff • Directly address issues of compliance with performer given tendencies of noncompliance/excessive compliance in performing arts culture. • Educate performer and appropriate artistic support staff/family regarding requirements of optimal performance • Provide functional training for performance to include: o Simulated performance environments and tasks o Injury prevention education relative to performance environment (e.g., schedule intensity, training duration, repertoire, etc) o Therapeutic exercise with performance-specific considerations given to implementation and progression.
Non-technical Professional Responsibilities
Educate and collaborate with arts management regarding the impact of organizational structure (e.g., rehearsal schedule, lay-off periods, breaks) and practice/performance environment (e.g., floor/surface, temperature) on health of performers.
Educate other health care and performing arts professionals/administrators, and the public at large, as to the scope and role of physical therapists in performing arts and the injury prevention needs of performers.

Maintain current knowledge of performing arts physical therapy techniques, methods and theories, as well as, current professional/medical-legal issues as they pertain to performing arts physical therapy.
Identify research needs within the field of performing arts, evaluate outcomes data, and assess new concepts and technologies.
Contribute to performing arts physical therapy body of knowledge by performing some for of clinical research
Manage staff and resources, including on and off-site services, for the performing artist while ensuring quality of services in those locations.
Knowledge Areas
Biomechanics and pathomechanics relative to movement demands of performing arts.
Ergonomic and environmental risk factors specific to various art disciplines.
Orthotic, protective, and supportive devices related to the functional and aesthetic requirements of performing arts.
Performing arts functional scales.
Expected behaviors and social pressures related to injury management within the arts organization and the general performing arts community.
Organizational structure of performing arts management and venues.
Adaptive, supportive equipment and supplies available to the performing arts community.
Alternative pathways for provision and reimbursement of healthcare services within the performing arts settings (e.g., direct payment of services from company management).

Table 20. Competencies unique to treating Performing Artists (Continued)

Other organzations devoted to performing arts healthcare.
Specific practice/performance requirements of the performer (e.g., aerobic, range of motion, fine motor coordination, skill level).

Performer-specific epidemiological injury characteristics.
Functional and aesthetic demands of various art disciplines.
Training/performance demands.
Typical training progressions within various art disciplines.
Risk factors associated with over-training.
Inconsistency between training demands and performance requirements
Typical anatomical and physiological characteristics of the performer within specific art disciplines.
Impact of anatomical variations on performer's impairments.
Psychosocial tendencies in performers relative to compliance, body awareness, pain perception, and performance anxiety.
Psychological/emotional conditions typically seen in the performing arts population.
Impact of behavioral health risk factors on performer's impairments.

CONCLUSIONS

Appendix E presents the executive summary and the competencies included in the Description of Specialized Practice for Physical Therapy for Performing Artists. The DSP and its associated technical report should be used to guide the development of continuing education, future research endeavors, and curriculum for residency, fellowship and/or credentialing efforts in the subspecialty of physical therapy for performing artists.

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APPENDIX A

Practice Analysis Budget

Tasks	Budget	Actual Expenditure
Spring 2001		
Grant Application, Project Planning, Literature Review	$0	$0
CSM 2001, initial meeting with Facilitator Mary Milidonis	$0	$0
March 2001, First National Advisory Group (NAG) Meeting, Arlington, VA (establishing KSA's, Duties, Tasks)		
Meeting Room/Food x 2 days x 12 members	$363	$0 (donated by principal investigator)
Per Diem ($232/day/member) and Travel Assistance ($470/member) x 10 group Members	$9,340.00	$6672.31
Facilitator Labor, x 32 hrs, x $100/hr	$3,200.00	$4,000.00
Facilitator per diem x $232/day x 2 days	$464.00	$278.06
Facilitator Travel Assistance	$470.00	$224.50
Phone Calls/Communication	$51.00	$0.00
Printing/Copying	$400.00	$399.32
Administrative Time x 48 hrs	$675.00	$0.00 (Donated by principal investigator)
June 2001, Meeting of Subcommittee of NAG, Delaware, develop draft survey based on work of NAG meeting; 3 people x 16 hrs (48 labor hours)	$0.00	$0.00 (Donated by steering committee)
August 2001, Meeting of Subcommittee of NAG, NY, complete draft survey; 3 people x 16 hrs (48 labor hours)	$0.00	$0.00 (Donated by steering committee)
Fall 2001		
Additional 48 hours labor to finalize edits/revisions to draft survey	$565.00	$0.00 (Donated by principal investigator)
Copy, mail, and pilot survey with larger NAG group	$0.00	$0.00 (Donated by principal investigator)
Solicit Bids for Editing and Distributing Survey to approximately 400 therapists; collecting and entering data; summarizing data; and presenting results to NAG	$0.00	$0.00
Subtotal 2001	**$15,428.00**	**$11, 604.00**
Summer 2002		
June-August 2002: Review, revise, and format the survey instrument drafted and piloted by the PASIG (Knapp and Associates International, Inc.)	$1,600	$1,600
September-October 2002: Print, administer surveys, and follow-up postcards. Email when possible (Knapp and Associates International, Inc.)	$2,085	$3,462
Fall 2002		
November-December 2002: receive completed surveys; log returns; enter and quality control respondent data (Knapp and Associates International, Inc.)	$1,900	$1,900
November-December 2002: Analyze data (Knapp and Associates International, Inc.)	$3,800	$3,800
December 2002: Prepare a summary of findings for meeting with the PASIG (Knapp and Associates International, Inc.)	$1,350	$1,350

Budget (continued)

Tasks	Budget	Actual Expenditure
December 2002: Meet with PASIG NAG Steering committee to review findings and facilitate developing/writing competencies (Knapp and Associates International, Inc)	$1,853	$0 (completed via email and conference calls; time and money donated)
Per Diem x 3 members x $200/day x 2 days	$1200	$0
Airfare Assist x 3 members x $200/member	$600	$0
Subtotal 2002	**$13,770**	**$12,112**
2003		
January-March 2003: Draft competencies document (Description of Specialized Practice) – PASIG Practice Analysis Steering Committee	$0	$0 (time donated by steering committee)
March 2003: E-mail full National Advisory Committee with draft DSP; revise as necessary -- PASIG Practice Analysis Steering Committee	$0	$0 (Donated time)
June 2003: Write final competency document and submit to the Orthopaedic Section	$0	$0 (Donated time)
September-October: Draft/revise technical report	$0	$0 (Donated time by Steering Committee)
November 2003: Submit final copy technical report to orthopaedic section	$0	$0
Subtotal 2003	**$0**	**$0**
Total 2000-2003	**$29,198**	**$23,716**

Appendix B

Members, Alternates, and Facilitator of the

Performing Arts National Advisory Group

The Steering Committee

Jennifer M. Gamboa, MPT, OCS, Chair
Marshall Hagins, PhD, PT
Tara Jo Manal, MPT, OCS, SCS

The Performing Arts National Advisory Group

Mary Milidonis, MMSc, PT, OCS (Facilitator)
Brent Anderson, PT, OCS
Shaw Bronner, MHS, PT, OCS
Michelina Cassella, PT
Gayanne Grossman, PT
Keith Kleven, PT, MS, ATC
Marijeanne Liederbach, MSPT, MS, ATC,
Peter Marshall, MA, PT
Lynn E. Meddoff, MA, MPT
Marika Molnar, MA, PT
Nicholas Quarrier, MHS, PT, OCS
Donna Ritter, PT
Jeffrey T. Stenback, PT, OCS

Alternates (Available for Phone Consults)

Eve Colley, PT
Kathi Fairbend, MSPT
Joan Firra, MPT
Jennifer Green, MSPT
Kati Keller, PT
Julnar Rizk, MSPT

Appendix C:

Mean/Standard Deviations for Frequency and Criticality of

Responsibilities for Physical Therapy in the Performing Arts Subspecialty

	Frequency		Criticality	
Description of Responsibilities (#'s represent original survey question #)	**Mean**	**SD**	**Mean**	**SD**
1. Recognize injuries and illnesses that require emergency medical intervention and provide emergency care, management, transport, and referral as appropriate	**1.53**	1.04	**2.70**	0.61
2. Determine the extent of injury and possible sequela to appropriately determine whether the performer has the ability to continue participation without incurring additional injury	**2.66**	1.20	**2.90**	0.30
3. Obtain general demographic information	**3.14**	1.18	**1.51**	1.05
4. Obtain social history (e.g., cultural beliefs and support systems)	**3.05**	1.18	**1.65**	0.96
5. Obtain work/performance place and status data that includes, but is not limited to: current and prior work; performance requirements/occupational demands (e.g., training, touring, and performing demands); ergonomic considerations (e.g., temperature, costumes, footwear, instrument type, flooring, constraints to motion); level of skill/experience of the performer; and utilization of adaptive devices (e.g., taping, bracing, instrument modification)	**3.38**	0.95	**2.77**	0.48
6. Obtain growth and development history	**2.65**	1.29	**1.99**	0.73
7. Obtain data on living environment and community characteristics	**2.63**	1.21	**1.51**	0.89
8. Obtain general health status via self-report, family report, or caregiver report that includes, but is not limited to: physical function, psychological function, and psychosocial factors (e.g., performance anxiety, performance organization politics and expectations, life stressors, body perception, and emotional response to current condition)	**3.13**	1.08	**2.21**	0.80
9. Obtain data regarding social/health habits (past and current), including behavioral health risks (e.g., smoking, substance use, eating patterns, risk factors related to sexually transmitted diseases) and fitness level	**3.00**	0.99	**2.10**	0.85
10. Identify familial health risks (e.g., history of cancer)	**2.54**	1.34	**1.33**	0.97
11. Obtain medical/surgical history	**3.07**	1.12	**2.00**	0.99
12. Obtain data regarding current condition(s)/chief complaint(s) by identifying areas of primary and secondary symptoms including recognition of contributions from multiple sites; quality and behavior of symptoms, previous relevant history; current therapeutic interventions; goals of performer, family, caregiver, and artistic staff for the therapeutic intervention	**3.62**	0.69	**2.77**	0.59
13. Obtain data regarding functional status and activity level of daily living and performance-related tasks	**3.51**	0.83	**2.59**	0.72
14. Obtain data regarding medications currently and previously taken for chief complaint, and for other conditions	**3.34**	0.95	**1.96**	0.92
15. Obtain relevant data from other medical tests, records and clinical findings	**3.17**	0.99	**2.10**	0.96
16. Conduct a systems review to identify the impaired or unimpaired status of the cardiovascular/pulmonary system; musculoskeletal system; neuromotor system; integumentary system; and communication ability	**3.13**	1.11	**2.08**	0.92
17. Identifying relevant, consistent and accurate information	**3.63**	0.71	**2.41**	0.85
18. Assessing "red flags" and determining need based upon whether patient demonstrates: a) neuromusculoskeletal problems responsive to physical therapy intervention or, b) condition(s) requiring referral to another health care provider	**3.45**	0.84	**2.55**	0.81
19. Identifying chief and secondary problems	**3.66**	0.72	**2.48**	0.79

	Frequency		Criticality	
Description of Responsibilities (#'s represent original survey question #)	**Mean**	**SD**	**Mean**	**SD**
20. Developing a working hypothesis of the physical therapy diagnosis that includes a) nature and severity of problem(s), b) probable cause(s) of problem(s), c) anatomical structures involved, d) stage of condition, and e) possible contraindications to physical therapy examination	**3.66**	0.74	**2.73**	0.61
21. Includes examination techniques with a high probability of reproducing the chief complaint and contributing to the development and refinement of the working hypothesis(es)	**3.61**	0.75	**2.70**	0.62
22. Is comprehensive but has the focus and detail appropriate to the working hypothesis, the patient's problems, and the performance context	**3.55**	0.78	**2.66**	0.71
23. Considers the nature, severity and irritability of the symptoms/problems	**3.67**	0.72	**2.63**	0.68
24. Prioritizes areas, movements and functional activities to be examined as well as examination procedures and examination sequence	**3.65**	0.72	**2.59**	0.65
25. Anthropometric characteristics: a) assess edema, and b) assess body dimensions and composition	**3.18**	0.91	**1.86**	0.96
26. Aerobic capacity and endurance: assess aerobic capacity in relationship to performance requirements (e.g., dyspnea perceived exertion, heart rate)	**2.31**	1.19	**1.73**	0.88
27. Arousal attention and cognition: assess patient-determined effects of cooperation and motivation (depression or impaired motivation) on rehabilitation process	**2.66**	1.23	**1.85**	0.97
28. Assistive and adaptive devices: assess effectiveness of assistive or adaptive devices or equipment used during performance activities (e.g., instrument modifications)	**2.61**	1.09	**2.26**	0.82
29. Circulation (arterial, venous, lymph): assess circulatory condition (e.g., vertebral artery examination, skin condition, thoracic outlet tests, and peripheral pulses)	**2.45**	1.16	**1.77**	0.90
30a. Response to palpatory provocation with special consideration of nerves at risk due to performance demands	**2.81**	1.14	**2.35**	0.78
30b. Disorders of the central nervous system (e.g., abnormal reflexes, muscle hypertonicity, coordination deficits)	**2.31**	1.32	**1.93**	0.98
30c. Peripheral nervous system (e.g., sensory and motor deficits corresponding to segmental level or individual nerve)	**2.93**	1.06	**2.09**	0.98
30d. Autonomic nervous system (e.g., vasomotor instability, excessive or absent swelling, pupil constriction)	**1.96**	1.36	**1.76**	1.00
30e. Sensory nerve distribution (e.g., discrimination tests, thoracic outlet tests, pain, light touch, pressure)	**2.54**	1.23	**1.82**	1.05
31. Ergonomics and body mechanics: assess environmental hazards, and health and safety risks, including but not limited to: training duration/ intensity, recent changes in training/performance/ rehearsal schedule, repertoire, temperature, costumes, footwear, instrument type, flooring, constraints to motion, and presence of actual, potential or repetitive trauma	**3.42**	0.83	**2.88**	0.36
32. Gait, locomotion and balance: assess balance during static and dynamic performance-specific activities	**3.31**	0.95	**2.64**	0.60
33a. Changes in body contour that suggests underlying musculoskeletal dysfunction (e.g., effusion)	**3.11**	1.05	**2.20**	0.89
33b. Changes in skin quality and appearance associated with underlying musculoskeletal dysfunction (e.g., adhesion formation, lesions, vascular insufficiency, temperature changes)	**3.01**	1.14	**2.05**	0.93

	Frequency		Criticality	
Description of Responsibilities (#'s represent original survey question #)	**Mean**	**SD**	**Mean**	**SD**
33c. Soft tissue mobility	**3.60**	0.78	**2.38**	0.92
34a. Ligamentous stability	**3.46**	0.82	**2.63**	0.80
34b. Accessory motion	**3.52**	0.80	**2.54**	0.85
35a. Compensatory movements	**3.57**	0.78	**2.62**	0.66
35b. Abnormal patterns of muscle activity during active and performance-specific motion	**3.62**	0.75	**2.75**	0.52
35c. Ability to demonstrate the skillful and efficient assumption, maintenance, modification and control of performance-specific postures and movement patterns (considering patterns of co-contraction/stabilization/disassociation)	**3.61**	0.73	**2.83**	0.38
36a. Muscle tension and atrophy	**3.54**	0.82	**2.37**	0.89
36b. Muscle strength, power, endurance during performance-specific functions	**3.48**	0.83	**2.60**	0.66
36c. Orthotic, protective and supportive devices: effectiveness of orthotic, protective and supporting devices used during performance activities (e.g., taping, bracing, footwear modifications)	**3.06**	1.01	**2.64**	0.53
37. Pain and nociception	**3.49**	0.80	**2.09**	0.94
38a. Alignment of body segments during activities of daily living and during performance specific activities	**3.60**	0.73	**2.70**	0.58
38b. Bony anomalies or structural asymmetries and assess relative positions of bony prominences in neutral and performance specific positions	**3.34**	0.94	**2.53**	0.73
39a. Available AROM compared with expected range with respect to age, body type, physical condition and performance-specific requirements	**3.57**	0.77	**2.57**	0.74
39b. Effects of altering position at an associated segment on available AROM (e.g., the effect of cervical side-bending on active shoulder abduction)	**3.30**	0.93	**2.32**	0.89
39c. Effects of weight-bearing, repeated, sustained or combined movements on AROM and symptom generation	**3.51**	0.79	**2.51**	0.74
39d. Symptoms, crepitus or sounds associated with AROM and point of AROM in which they occur	**3.45**	0.75	**2.25**	0.84
39e. Onset, quality and amount of motion of bony landmarks during AROM	**3.46**	0.83	**2.33**	0.92
40a. Available PROM compared with expected range with respect to age, body type, physical condition and performance-specific requirements	**3.49**	0.80	**2.47**	0.84
40b. The nature of the limitation at the end of the available range (e.g., end feel)	**3.54**	0.83	**2.33**	0.92
40c. Effects of repeated, sustained or combined movements on PROM and symptom generation)	**3.33**	0.90	**2.26**	0.88
40d. Available range of muscle flexibility by use of muscle length tests compared with performance-specific requirements (including single and multijoint structures)	**3.41**	0.90	**2.63**	0.64
40e. Symptoms, crepitus or sounds associated with PROM and point of PROM in which they occur	**3.30**	0.90	**2.03**	0.87
41. Work (job/school/play), community and leisure integration or reintegration (including IADL): assess performer's ability and readiness to return to performance-specific demands via functional tests	**3.10**	1.09	**2.57**	0.73
42. Correlate history and physical examination findings to identify contributory, noncontributory and inconsistent information	**3.40**	0.90	**2.46**	0.76

	Frequency		Criticality	
Description of Responsibilities (#'s represent original survey question #)	**Mean**	**SD**	**Mean**	**SD**
43. Differentiate a neuromusculoskeletal from a nonneuromusculoskeletal problem	**3.33**	0.94	**2.45**	0.86
44. Establish clinical judgment regarding examination findings, including but not limited to: priority, nature and severity of problems(s); location and type of involved structures(s); possible indications, cautions or contraindications to physical therapy management; pathological sources of symptomatology; and psychosocial factors affecting management	**3.49**	0.90	**2.69**	0.66
45. Correct deficiencies in examination as appropriate	**3.30**	0.99	**2.32**	0.83
46. Correlate history and physical examination findings to knowledge of specific epidemiolgic injury characteristics in the performing arts	**3.36**	0.99	**2.76**	0.49
47. Determine relevance of biomechanical demands of performance potentially related to the chief complaint (e.g., plantar flexion range of motion as causative factor in posterior impingement)	**3.43**	0.89	**2.90**	0.30
48. Develop impairment list to guide physical therapy interventions to improve performer specific function	**3.20**	1.11	**2.58**	0.66
49. Organize examination findings into clusters, syndromes, or categories to which physical therapy interventions will be directed and to determine prognosis	**3.29**	0.95	**2.37**	0.70
50. Predict the optimal level of improvement in performance-specific function and the amount of time needed to reach that level	**3.27**	0.94	**2.63**	0.58
51. Determine performance-specific criteria necessary to return to maximum possible participation in the art form (e.g., 90 minutes of pointe work without modification)	**3.27**	1.04	**2.79**	0.44
52. Determine the performer's ability to continue participation without further injury	**3.34**	0.98	**2.89**	0.39
53. Determine need for continuance, modification, or discontinuance of training and/or performance	**3.38**	0.91	**2.83**	0.44
54. Determine treatment priorities through identification of performer's primary problem(s) which have the highest probability of responding to physical therapy intervention	**3.40**	0.94	**2.67**	0.65
55. Develop a plan of care, which includes a) establishment of list of specific interventions; b) frequency and duration of interventions; c) anticipated goals; d) expected outcomes; and e) D/C plan	**3.37**	0.92	**2.53**	0.78
56. Collaborate and coordinate with performance organization regarding performers care, expected functional outcomes and timeline for return to performance	**2.75**	1.18	**2.60**	0.65
57. Coordinate with insurance provider regarding performer's case management	**2.17**	1.26	**2.04**	0.90
58. Collaborate with appropriate artistic support staff and/or family regarding modifications of art form/lifestyle activities necessary to maintain/improve health of the performer	**2.49**	1.25	**2.36**	0.73
59. Refer to other professionals or resources when necessary	**2.41**	1.04	**2.21**	0.82
60. Educate the performer and appropriate artistic support staff/family regarding requirements of optimal performance (e.g., dietary guidelines, substance abuse, sleep deprivations, smoking)	**2.72**	1.13	**2.42**	0.66
61. Discuss examination findings, diagnosis, and prognosis and outline expected outcomes with patient/client	**3.48**	0.80	**2.52**	0.76
62. Discuss/negotiate acceptable treatment goals, plan, and responsibilities	**3.44**	0.88	**2.42**	0.83

	Frequency		Criticality	
Description of Responsibilities (#'s represent original survey question #)	**Mean**	**SD**	**Mean**	**SD**
63. Outline responsibility of patient in order to achieve established goals	**3.46**	0.83	**2.51**	0.86
64. Actively engage cooperation of the patient and associated artistic staff by using appropriate methods, style and level of communication	**3.28**	0.93	**2.63**	0.74
65. Educate patient in home care treatment	**3.54**	0.83	**2.45**	0.82
66. Directly address issues of compliance with performer given tendencies of noncompliance/excessive compliance in performing arts culture	**3.25**	0.94	**2.55**	0.71
67. Provide program of follow-up care	**3.20**	0.94	**2.27**	0.91
68. Therapeutic exercise: performance-specific considerations to the implementation and progression of the following interventions: a) aerobic capacity/endurance training; b) balance, coordination and agility training; c) body mechanics and postural stabilization; d) flexibility exercises; e) gait and locomotion training; f) neuromotor training; g) relaxation training; and h) strength, power, and muscular endurance training	**3.76**	0.62	**2.74**	0.54
69. Functional training for performance, including a) simulated environments and tasks, task adaptation, task training, work conditioning and work hardening; and b) injury prevention education relative to performance environment (e.g., schedule intensity, training duration, repertoire, temperature, costumes, footwear, instrument type, flooring/surface, constraints to motion, presence of actual, potential or repetitive trauma)	**3.58**	0.72	**2.85**	0.42
70. Manual therapy techniques (e.g., manual traction, connective tissue massage, therapeutic massage, mobilization/manipulation, passive range of motion)	**3.73**	0.65	**2.53**	0.84
71. External dressings, supports, braces, protective taping/devices and cushions (with consideration to aesthetic requirements)	**2.94**	1.03	**2.42**	0.69
72. Integuementary repair and protection techniques (e.g., application of dressings and topical agents, and education regarding skin care relative to performance demands, such as blisters, corns, abrasions)	**2.50**	1.32	**2.20**	0.74
73. Electrotherapeutic modalities	**3.01**	1.04	**1.58**	0.92
74. Physical agents and mechanical modalities	**3.21**	1.01	**1.62**	0.92
75. Assess response to intervention	**3.62**	0.66	**2.46**	0.85
76. Analyze significance of changes in patient status as it relates to the treatment plan (i.e., relationship between anticipated result intervention and actual result, cause of change, adequacy of change, factors that limit progress)	**3.58**	0.69	**2.53**	0.76
77. Modify plan of care as needed (e.g., alter interventions, tests used, referral necessary)	**3.51**	0.72	**2.47**	0.81
78. Modify goals as needed (e.g., evaluate whether are goals realistic, modify relative to new tests and measures)	**3.29**	0.85	**2.40**	0.83
79. Recognize when performer has received optimal benefit from physical therapy	**3.17**	0.97	**2.54**	0.76
80. Anticipate performer's needs and prepare for discharge	**3.29**	0.85	**2.51**	0.73
81. Characterize or quantify the impact of physical therapy interventions on the following domains: pathology, impairments, function (e.g., ADL, performance-specific), disability (e.g., family, community, performance roles), risk reduction/prevention, health/wellness/fitness, performing arts organizational resources, patient/client satisfaction	**2.72**	1.23	**2.21**	0.73
82. Perform outcomes data collection for use in statistical reports	**1.60**	1.27	**1.56**	0.84

	Frequency		Criticality	
Description of Responsibilities (#'s represent original survey question #)	**Mean**	**SD**	**Mean**	**SD**
83. Plan, coordinate and administer preparticipation and ongoing screening activities for identification of lifestyle factors (e.g., diet, smoking, substance abuse), performance/training place factors (e.g., seating arrangements of orchestra, floor/surface conditions, temperature) and individual neuromusculoskeletal factors (strength, power, endurance, flexibility) that may lead to increased risk for health problems or preclude performers participation	**1.67**	1.15	**2.32**	0.69
84. Educate and collaborate with management regarding the impact of organizational structure (e.g., rehearsal schedule, lay-off periods, break periods) and practice/performance environment (e.g., floor/surface, temperature) on health of performers	**1.54**	1.09	**2.40**	0.65
85. Prescribe and conduct programs in prevention using individual and group training (e.g., strengthening, stretching, posture, balance, endurance), ergonomic redesign, and education	**1.75**	1.19	**2.39**	0.73
86. Contribute to the professional development of other physical therapists by teaching and mentoring	**1.79**	1.09	**2.29**	0.75
87. Educate other health care and performing arts professionals/administrators, and the public at large, as to the scope and role of physical therapists in the performing arts and the injury prevention needs of performers	**1.61**	1.05	**2.44**	0.69
88. Apply scientific methods to read and critically review the professional literature	**2.42**	0.86	**2.13**	0.74
89. Integrate current, scientifically valid research into performing arts physical therapy practice	**2.54**	1.08	**2.27**	0.75
90. Contribute to performing arts physical therapy body of knowledge by performing some form of clinical research (e.g., case studies and clinical trials) and/or sharing observations through presentations or other related activities	**1.10**	0.92	**2.22**	0.78
91. Identify research needs within the field of performing arts, evaluate outcomes data and assess new concepts and technologies	**1.13**	1.03	**2.22**	0.70
92. Maintain current knowledge of performing arts physical therapy techniques, methods, and theories as well as current professional/medical-legal issues as they pertain to performing arts physical therapy through attendance at professional education venues and where current research is reviewed/reported	**1.68**	1.09	**2.47**	0.68
93. Maintain active participation in professional organizations that address issues related to performer's health	**2.37**	1.24	**2.18**	0.95
94. Maintain adherence to APTA Code of Ethics	**3.85**	0.57	**2.31**	1.15
95. Consult with and/or educate peers, colleagues, other health care professionals, community agencies, legislative and/or regulatory organizations regarding issues of physical therapy practice pertaining to the performing arts	**2.06**	1.15	**2.33**	0.73
96. Manage staff and resources, including on and off-site services, for the performing artist while ensuring quality of services in those locations	**2.20**	1.47	**2.13**	0.83
97. Plan, direct, organize and manage human, technical, environmental and financial resources effectively and efficiently	**2.28**	1.47	**1.91**	1.01

Appendix D:

Mean/Standard Deviations for Frequency, Criticality and Level of Judgment for Knowledge Areas Necessary for Physical Therapy in the Performing Arts Subspecialty

	Frequency		Criticality		Judgment	
Description of Knowledges (#'s represent original survey question #)	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
98. Normal and abnormal human anatomy	**3.94**	0.29	**2.33**	0.89	**2.35**	0.62
99. Physiology and pathophysiology	**3.78**	0.57	**2.26**	0.93	**2.32**	0.59
100. Normal and abnormal growth and development	**3.00**	1.13	**2.07**	0.79	**2.07**	0.68
101. Principles of motor learning/control	**3.56**	0.87	**2.30**	0.91	**2.45**	0.64
102. Principles of balance	**3.67**	0.73	**2.44**	0.76	**2.51**	0.60
103. Biomechanics and pathomechanics relative to movement demands of performing arts, considering single and multijoint systems	**3.70**	0.70	**2.75**	0.59	**2.81**	0.49
104. Ergonomic and environmental risk factors specific to various art disciplines	**3.42**	0.90	**2.53**	0.66	**2.53**	0.66
105. Imaging studies and ancillary tests	**2.42**	1.12	**1.68**	0.81	**1.84**	0.78
106. Orthopedic surgical and nonsurgical interventions	**2.87**	1.09	**2.08**	0.80	**2.09**	0.68
107. Basic pharmacology	**2.71**	1.03	**1.63**	0.83	**1.55**	0.64
108. Selection, sequencing, proper execution of tests and measures necessary for differential diagnosis	**3.65**	0.64	**2.37**	0.84	**2.72**	0.48
109. Sign/symptom clusters, syndromes, or categories that correlate to physical therapy diagnoses	**3.66**	0.64	**2.41**	0.86	**2.78**	0.48
110. Signs/symptoms beyond the scope of physical therapy management	**2.99**	1.07	**2.21**	0.91	**2.21**	0.77
111. Evidence-based theory and practice relative to modalities	**3.42**	0.83	**1.74**	0.94	**2.09**	0.68
112. Evidence-based theory and practice relative to therapeutic exercise and functional re-education	**3.76**	0.61	**2.40**	0.78	**2.48**	0.64
113. Evidence-based theory and practice relative to manual therapy techniques	**3.69**	0.59	**2.35**	0.87	**2.43**	0.64
114. Emergency first aid procedures and interventions	**1.92**	1.30	**2.13**	1.00	**2.16**	0.68
115. Orthotic, protective, and supportive devices related to the functional and aesthetic requirements of performing arts	**2.69**	1.11	**2.42**	0.71	**2.36**	0.67
116. Preferred practice patterns used to treat physical therapy diagnoses	**3.15**	1.29	**2.12**	0.93	**2.32**	0.73
117. Performing arts functional scales	**2.08**	1.51	**2.13**	0.72	**1.97**	0.80
118. Multiple methods, styles and levels of communication and learning	**3.29**	1.08	**1.99**	0.88	**2.22**	0.70
119. Research methods and design	**1.44**	1.09	**1.58**	0.80	**1.85**	0.94
120. Methods of analysis of research findings applicable physical therapy for performing artists	**1.65**	1.11	**1.85**	0.86	**2.06**	0.92
121. Community and medical resources	**2.38**	1.20	**1.84**	0.86	**1.72**	0.78
122. Applicable medical/legal/ethical issues	**2.81**	1.26	**2.00**	0.92	**2.01**	0.77
123. Alternative pathways for provision and reimbursement of healthcare services within the performing arts settings (e.g., direct payment of services from company management)	**2.01**	1.35	**2.06**	0.83	**1.98**	0.80
124. Organizational structure of performing arts management and venues (e.g., artistic director, conductor, teachers, off-site physician)	**2.20**	1.38	**2.16**	0.83	**1.87**	0.80
125. Alternative and complimentary healthcare providers	**2.67**	1.06	**1.96**	0.83	**1.80**	0.75

Description of Knowledges (#'s represent original survey question #)	Frequency		Criticality		Judgment	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
126. Other organizations devoted to performing arts healthcare (e.g. IADMS, PAMA, etc)	**1.75**	1.07	**1.97**	0.75	**1.62**	0.71
127. Adaptive, supportive equipment and supplies available to the performing arts community	**2.29**	1.25	**2.09**	0.72	**1.90**	0.76
128. Expected behaviors and social pressures related to injury management within the arts organization and the general performing arts community	**2.76**	1.25	**2.25**	0.78	**2.19**	0.76
129. Specific practice/performance requirements of the performer (e.g., aerobic, range of motion, fine motor coordination, skill level)	**3.57**	0.82	**2.73**	0.55	**2.65**	0.62
130. Performer-specific epidemiological injury characteristics (e.g., incidence, mechanism, technique specific, age-related changes)	**3.36**	0.93	**2.64**	0.58	**2.51**	0.68
131. Typical training progressions within various art disciplines	**3.23**	1.04	**2.54**	0.58	**2.45**	0.60
132. Functional and aesthetic demands of various art disciplines	**3.36**	0.92	**2.62**	0.54	**2.47**	0.68
133. Training/performance demands (e.g., workload variation, practice/rehearsal schedules, layoffs)	**3.34**	1.02	**2.58**	0.64	**2.49**	0.68
134. Risk factors associated with over-training (e.g., excessive jump training)	**3.34**	0.90	**2.53**	0.66	**2.56**	0.59
135. Inconsistency between training demands and performance requirements (e.g., anaerobic dance class vs. aerobic performance)	**3.04**	1.10	**2.35**	0.76	**2.49**	0.66
136. Typical anatomical and physiological characteristics of the performer within specific art disciplines (e.g., excessive ROM)	**3.47**	0.86	**2.54**	0.64	**2.42**	0.69
137. Psychosocial tendencies in performers relative to compliance, body awareness, pain perception, and performance anxiety	**3.20**	0.95	**2.41**	0.73	**2.39**	0.71
138. Impact of anatomical variations (e.g., os trigonum) on performers' impairments	**3.09**	1.10	**2.53**	0.70	**2.45**	0.71
139. Impact of concurrent medical conditions (e.g., amenoria and osteoporosis) on performers' impairments	**2.99**	1.15	**2.40**	0.71	**2.42**	0.66
140. Impact of behavioral health risk factors (e.g., smoking effects on healing rates) on performers' impairments	**2.84**	1.20	**2.14**	0.84	**2.25**	0.63
141. Psychological/emotional conditions typically seen in the performing arts population	**3.04**	1.19	**2.36**	0.76	**2.24**	0.71

Appendix E

Executive Summary and Description of Specialty Practice for Physical Therapy for Performing Artists

Description of Specialized Clinical Practice in Physical Therapy for Performing Artists

Prepared by the

Performing Arts Special Interest Group,

Orthopaedic Section
of the
American Physical Therapy Association

Acknowledgements

This document was prepared by members of the Performing Arts Special Interest Group of the Orthopaedic Section of the American Physical Therapy Association, and approved by the Orthopaedic Section's Executive Board. The competencies contained in this document are based on the results of surveys that were distributed to approximately 600 physical therapists. A steering committee, comprised of founding members of the Performing Arts Special Interest Group, developed the survey in consultation with the Performing Arts National Advisory Group. The steering committee would like to extend a special thanks to the National Advisory Group members, the Orthopaedic Section for funding this project, and the numerous other members of this profession who provided assistance and advice in this process.

The Steering Committee

Jennifer M. Gamboa, MPT, OCS, Chair
Marshall Hagins, PhD, PT
Tara Jo Manal, MPT, OCS

The Performing Arts National Advisory Group

Mary Milidonis, MMSc, PT, OCS (Facilitator)
Brent Anderson, PT, OCS
Shaw Bronner, MHS, PT, OCS
Michelina Cassella, PT
Gayanne Grossman, PT
Keith Kleven, PT, MS, ATC
Marijeanne Liederbach, MSPT, MS, ATC,
Peter Marshall, MA, PT
Lynn E. Meddoff, MA, MPT
Marika Molnar, MA, PT
Nicholas Quarrier, MHS, PT, OCS
Donna Ritter, PT
Jeffrey T. Stenback, PT, OCS

INTRODUCTION

The Performing Arts Special Interest Group (PASIG) was charged by the Orthopaedic Section of the American Physical Therapy Association to undertake a practice analysis to define the scope of practice for physical therapy for performing artists. The analysis culminated in this description of specialized clinical practice (DSCP), whose purpose is to define the breadth of knowledge and responsibilities that are necessary to facilitate successful patient outcomes in the performing arts population.

The Performing Arts National Advisory Group decided early on that any description of performing arts practice should be a stand-alone document. Therefore, this DSCP includes the responsibilities and knowledge of a generalist as well as those unique to physical therapists that treat performing artists. The format and language of this DSCP parallels that of the *Guide to Physical Therapist Practice*.

Our National Advisory Group experts met in March of 2001 to identify the critical elements of practice to include in an analysis. It became very clear to those members present that therapists who treat performing artists must be uniquely competent in multiple areas of specialty practice. The Steering Committee used additional source material such as the *Guide to Physical Therapist Practice*, and the Descriptions of Advanced Clinical Practice for Orthopaedic, Sports, and Manual Physical Therapy to develop a detailed description of the required knowledge and skills, and to organize the description into line items suitable for a survey. Members of the National Advisory Group piloted a draft survey, and a revised survey was then mailed to approximately 600 therapists with experience treating performing artists. Respondents were asked to rate professional responsibilities in terms of frequency and criticality, and to rate knowledge areas in terms of frequency, criticality and level of judgment. The response rate for the survey was approximately 13 percent. All responses were analyzed by an independent third party (Knapp and Associates International, Inc.).

Based on the mean response rates, the Performing Arts National Advisory Group was then asked to decide which line items should be included in the final DSCP. There are no standard decision rules that dictate how to interpret the results of the survey. Ultimately, the National Advisory Group wanted to create a DSCP that fulfilled two purposes: 1) To reflect the genuine skills and knowledge that current physical therapists who treat performing artists possess, and 2) to describe the skills and knowledge necessary for future practice in an environment where therapists have increasing responsibilities for autonomous practice. Given the high mean values for frequency, criticality, and level of judgment on all items in the survey, the Performing Arts National Advisory Group decided to include all items in the final DSCP. The summary results of the survey are available upon request from Jennifer M. Gamboa, MPT, OCS. Please email your requests to her at jgamboa@bodydynamicsinc.com.

It is our hope that the Description of Specialized Clinical Practice in Physical Therapy for Performing Artists will be used to guide the development of continuing education, performing arts medicine curricula, future research endeavors, and possible fellowship and/or credentialing efforts.

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SECTION I: PROFESSIONAL RESPONSIBILITIES

TECHICAL PROFESSIONAL RESPONSIBILITIES

A. Emergency Care

1. Determine the extent of injury and possible sequela to appropriately determine whether the performer has the ability to continue participation without incurring additional injury

2. Recognize injuries and illnesses that require emergency medical intervention and provide emergency care, management, transport, and referral as appropriate

B. Patient Examination

1. Obtain work/performance place and status data that includes, but is not limited to: current and prior work; performance requirements/occupational demands (e.g., training, touring, and performing demands); ergonomic considerations (e.g., temperature, costumes, footwear, instrument type, flooring, constraints to motion); level of skill/experience of the performer; and utilization of adaptive devices (e.g., taping, bracing, instrument modification)

2. Obtain data regarding current condition(s)/chief complaint(s) by identifying areas of primary and secondary symptoms including recognition of contributions from multiple sites; quality and behavior of symptoms, previous relevant history; current therapeutic interventions; goals of performer, family, caregiver, and artistic staff for the therapeutic intervention

3. Obtain data regarding functional status and activity level of daily living and performance-related tasks

4. Obtain general health status via self-report, family report, or caregiver report that includes, but is not limited to: physical function, psychological function, and psychosocial factors (e.g., performance anxiety, performance organization politics and expectations, life stressors, body perception, and emotional response to current condition)

5. Obtain data regarding social/health habits (past and current), including behavioral health risks (e.g., smoking, substance use, eating patterns, risk factors related to sexually transmitted diseases) and fitness level

6. Obtain relevant data from other medical tests, records and clinical findings

7. Conduct a systems review to identify the impaired or unimpaired status of the cardiovascular/pulmonary system; musculoskeletal system; neuromotor system; integumentary system; and communication ability

8. Obtain medical/surgical history

9. Obtain growth and development history

10. Obtain data regarding medications currently and previously taken for chief complaint, and for other conditions

11. Obtain social history (e.g., cultural beliefs and support systems)

12. Obtain general demographic information

13. Obtain data on living environment and community characteristics

14. Identify familial health risks (e.g., history of cancer)

15. Interpret data from history in order to assist in planning physical therapy exam by:

a. Developing a working hypothesis of the physical therapy diagnosis that includes a) nature and severity of problem(s), b) probable cause(s) of problem(s), c) anatomical structures involved, d) stage of condition, and e) possible contraindications to physical therapy examination

b. Assessing "red flags" and determining need based upon whether patient demonstrates: a) neuromusculoskeletal problems responsive to physical therapy intervention or, b) condition(s) requiring referral to another health care provider

c. Identifying chief and secondary problems

d. Identifying relevant, consistent and accurate information

16. Plan a physical exam that:

a. Includes examination techniques with a high probability of reproducing the chief complaint and contributing to the development and refinement of the working hypothesis(es)

b. Is comprehensive but has the focus and detail appropriate to the working hypothesis, the patient's problems, and the performance context

c. Considers the nature, severity and irritability of the symptoms/problems

d. Prioritizes areas, movements and functional activities to be examined as well as examination procedures and examination sequence

17. Conduct a physical examination (tests and measures) that collects data as necessary in the following categories:

a. Ergonomics and body mechanics: assess environmental hazards, and health and safety risks, including but not limited to: training duration/ intensity, recent changes in training/performance/ rehearsal schedule, repertoire, temperature, costumes, footwear,

instrument type, flooring, constraints to motion, and presence of actual, potential or repetitive trauma

b. Gait, locomotion and balance: assess balance during static and dynamic performance-specific activities

c. Work (job/school/play), community and leisure integration or reintegration (including IADL): assess performer's ability and readiness to return to performance-specific demands via functional tests

d. Assistive and adaptive devices: assess effectiveness of assistive or adaptive devices or equipment used during performance activities (e.g., instrument modifications)

e. Pain and nociception

f. Anthropometric characteristics—assessment of the following:

i. edema

ii. body dimensions and composition

g. Arousal attention and cognition: assess patient-determined effects of cooperation and motivation (depression or impaired motivation) on rehabilitation process

h. Circulation (arterial, venous, lymph): assess circulatory condition (e.g., vertebral artery examination, skin condition, thoracic outlet tests, and peripheral pulses)

i. Aerobic capacity and endurance: assess aerobic capacity in relationship to performance requirements (e.g., dyspnea perceived exertion, heart rate)

j. Neural integrity - assessment of the following*:*

i. Response to palpatory provocation with special consideration of nerves at risk due to performance demands

ii. Peripheral nervous system (e.g., sensory and motor deficits corresponding to segmental level or individual nerve)

iii. Disorders of the central nervous system (e.g., abnormal reflexes, muscle hypertonicity, coordination deficits)

iv. Sensory nerve distribution (e.g., discrimination tests, thoracic outlet tests, pain, light touch, pressure)

v. Autonomic nervous system (e.g., vasomotor instability, excessive or absent swelling, pupil constriction)

k. Integumentary integrity - assessment of the following:

i. Soft tissue mobility

ii. Changes in body contour that suggests underlying musculoskeletal dysfunction (e.g., effusion)

iii. Changes in skin quality and appearance associated with underlying musculoskeletal dysfunction (e.g., adhesion formation, lesions, vascular insufficiency, temperature changes)

l. Joint integrity and mobility - assessment of the following:

i. Ligamentous stability

ii. Accessory motion

m. Motor function (motor control and motor learning) - assessment of the following:

i. Ability to demonstrate the skillful and efficient assumption, maintenance, modification and control of performance-specific postures and movement patterns (considering patterns of co-contraction/stabilization/disassociation)

ii. Abnormal patterns of muscle activity during active and performance-specific motion

iii. Compensatory movements

n. Muscle performance (including strength, power and endurance) - assessment of the following:

i. Orthotic, protective and supportive devices: effectiveness of orthotic, protective and supporting devices used during performance activities (e.g., taping, bracing, footwear modifications)

ii. Muscle strength, power, endurance during performance-specific functions

iii. Muscle tension and atrophy

o. Posture - assessment of the following:

i. Alignment of body segments during activities of daily living and during performance specific activities

ii. Bony anomalies or structural asymmetries and assess relative positions of bony prominences in neutral and performance specific positions

p. Active Range of Motion (AROM) - assessment of the following*:*

i. Available AROM compared with expected range with respect to age, body type, physical condition and performance-specific requirements

ii. Effects of weight-bearing, repeated, sustained or combined movements on AROM and symptom generation

iii. Onset, quality and amount of motion of bony landmarks during AROM

iv. Effects of altering position at an associated segment on available AROM (e.g., the effect of cervical side-bending on active shoulder abduction)

v. Symptoms, crepitus or sounds associated with AROM and point of AROM in which they occur

q. Passive Range of Motion (PROM) - assessment of the following*:*

i. Available range of muscle flexibility by use of muscle length tests compared with performance-specific requirements (including single and multijoint structures)

ii. Available PROM compared with expected range with respect to age, body type, physical condition and performance-specific requirements

iii. The nature of the limitation at the end of the available range (e.g., end feel)

iv. Effects of repeated, sustained or combined movements on PROM and symptom generation)

v. Symptoms, crepitus or sounds associated with PROM and point of PROM in which they occur

C. Evaluation

1. Determine relevance of biomechanical demands of performance potentially related to the chief complaint (e.g., plantar flexion range of motion as causative factor in posterior impingement)

2. Correlate history and physical examination findings to knowledge of specific epidemiolgic injury characteristics in the performing arts

3. Establish clinical judgment regarding examination findings, including but not limited to: priority, nature and severity of problems(s); location and type of involved structures(s); possible

indications, cautions or contraindications to physical therapy management; pathological sources of symptomatology; and psychosocial factors affecting management

4. Develop impairment list to guide physical therapy interventions to improve performer specific function

5. Correlate history and physical examination findings to identify contributory, noncontributory and inconsistent information

6. Differentiate a neuromusculoskeletal from a nonneuromusculoskeletal problem

7. Correct deficiencies in examination as appropriate

D. Diagnosis

1. Organize examination findings into clusters, syndromes, or categories to which physical therapy interventions will be directed and to determine prognosis

E. Prognosis

1. Determine the performer's ability to continue participation without further injury

2. Determine need for continuance, modification, or discontinuance of training and/or performance

3. Determine performance-specific criteria necessary to return to maximum possible participation in the art form (e.g., 90 minutes of pointe work without modification)

4. Determine treatment priorities through identification of performer's primary problem(s) that have the highest probability of responding to physical therapy intervention

5. Predict the optimal level of improvement in performance-specific function and the amount of time needed to reach that level

6. Develop a plan of care, which includes:

a. establishment of list of specific interventions;

b. frequency and duration of interventions;

c. anticipated goals;

d. expected outcomes; and

e. discharge plan

F. Intervention

1. Coordination, communication and documentation:

a. Collaborate and coordinate with performance organization regarding performers care, expected functional outcomes and timeline for return to performance

b. Collaborate with appropriate artistic support staff and/or family regarding modifications of art form/lifestyle activities necessary to maintain/improve health of the performer

c. Refer to other professionals or resources when necessary

d. Coordinate with insurance provider regarding performer's case management

2. Patient/client-related instruction:

a. Actively engage cooperation of the patient and associated artistic staff by using appropriate methods, style and level of communication

b. Directly address issues of compliance with performer given tendencies of noncompliance/excessive compliance in performing arts culture

c. Discuss examination findings, diagnosis, and prognosis and outline expected outcomes with patient/client

d. Outline responsibility of patient in order to achieve established goals

e. Educate patient in home care treatment

f. Discuss/negotiate acceptable treatment goals, plan, and responsibilities

g. Educate the performer and appropriate artistic support staff/family regarding requirements of optimal performance (e.g., dietary guidelines, substance abuse, sleep deprivations, smoking)

h. Provide program of follow-up care

3. Procedural intervention - select and apply the following as needed:

a. Functional training for performance, including:

i. simulated environments and tasks, task adaptation, task training, work conditioning and work hardening; and

ii. injury prevention education relative to performance environment (e.g., schedule intensity, training duration, repertoire, temperature, costumes, footwear, instrument type, flooring/surface, constraints to motion, presence of actual, potential or repetitive trauma)

b. Therapeutic exercise: performance-specific considerations to the implementation and progression of the following interventions:

i. aerobic capacity/endurance training;

ii. balance, coordination and agility training;

iii. body mechanics and postural stabilization;
flexibility exercises;

iv. gait and locomotion training;

v. neuromotor training;

vi. relaxation training; and

vii. strength, power, and muscular endurance training

c. Manual therapy techniques (e.g., manual traction, connective tissue massage, therapeutic massage, mobilization/manipulation, passive range of motion)

d. External dressings, supports, braces, protective taping/devices and cushions (with consideration to aesthetic requirements)

e. Integuementary repair and protection techniques (e.g., application of dressings and topical agents, and education regarding skin care relative to performance demands, such as blisters, corns, abrasions)

f. Physical agents and mechanical modalities

g. Electrotherapeutic modalities

G. Re-examination

1. Recognize when performer has received optimal benefit from physical therapy

2. Analyze significance of changes in patient status as it relates to the treatment plan (i.e., relationship between anticipated result intervention and actual result, cause of change, adequacy of change, factors that limit progress)

3. Anticipate performer's needs and prepare for discharge

4. Modify plan of care as needed (e.g., alter interventions, tests used, referral necessary)

5. Assess response to intervention

6. Modify goals as needed (e.g., evaluate whether are goals realistic, modify relative to new tests and measures)

H. Outcomes

1. Characterize or quantify the impact of physical therapy interventions on the following domains: pathology, impairments, function (e.g., ADL, performance-specific), disability (e.g., family, community, performance roles), risk reduction/prevention, health/wellness/fitness, performing arts organizational resources, patient/client satisfaction

2. Perform outcomes data collection for use in statistical reports

NONTECHNICAL PROFESSIONAL RESPONSIBILITIES

A. Prevention and Promotion of Health, Wellness and Fitness

1. Educate and collaborate with management regarding the impact of organizational structure (e.g., rehearsal schedule, lay-off periods, break periods) and practice/performance environment (e.g., floor/surface, temperature) on health of performers

2. Prescribe and conduct programs in prevention using individual and group training (e.g., strengthening, stretching, posture, balance, endurance), ergonomic redesign, and education

3. Plan, coordinate and administer preparticipation and ongoing screening activities for identification of lifestyle factors (e.g., diet, smoking, substance abuse), performance/training place factors (e.g., seating arrangements of orchestra, floor/surface conditions, temperature) and individual neuromusculoskeletal factors (strength, power, endurance, flexibility) that may lead to increased risk for health problems or preclude performers participation

B. Professional Development

1. Education

a. Educate other health care and performing arts professionals/administrators, and the public at large, as to the scope and role of physical therapists in the performing arts and the injury prevention needs of performers

b. Contribute to the professional development of other physical therapists by teaching and mentoring

2. Critical inquiry

a. Maintain current knowledge of performing arts physical therapy techniques, methods, and theories as well as current professional/medical-legal issues as they pertain to performing arts physical therapy through attendance at professional education venues and where current research is reviewed/reported

b. Integrate current, scientifically valid research into performing arts physical therapy practice

c. Identify research needs within the field of performing arts, evaluate outcomes data and assess new concepts and technologies

d. Contribute to performing arts physical therapy body of knowledge by performing some form of clinical research (e.g., case studies and clinical trials) and/or sharing observations through presentations or other related activities

e. Apply scientific methods to read and critically review the professional literature

3. Professional conduct

a. Consult with and/or educate peers, colleagues, other health care professionals, community agencies, legislative and/or regulatory organizations regarding issues of physical therapy practice pertaining to the performing arts

b. Maintain adherence to APTA Code of Ethics

c. Maintain active participation in professional organizations that address issues related to performer's health

4. Administration

a. Manage staff and resources, including on and off-site services, for the performing artist while ensuring quality of services in those locations

b. Plan, direct, organize and manage human, technical, environmental and financial resources effectively and efficiently

SECTION II: KNOWLEDGE AREAS

HUMAN ANATOMY, PHYSIOLOGY AND PATHOPHYSIOLOGY

A. Normal and abnormal human anatomy

B. Physiology and pathophysiology

C. Normal and abnormal growth and development

MOVEMENT SCIENCE

A. Biomechanics and pathomechanics relative to movement demands of performing arts, considering single and multijoint systems

B. Ergonomic and environmental risk factors specific to various art disciplines

C. Principles of balance

E. Principles of motor learning/control

ORTHOPAEDIC MEDICAL/SURGICAL INTERVENTIONS

A. Orthopedic surgical and nonsurgical interventions

B. Imaging studies and ancillary tests

C. Basic pharmacology

EVIDENCE-BASED THEORY AND PRACTICE

A. Orthotic, protective, and supportive devices related to the functional and aesthetic requirements of performing arts

B. Sign/symptom clusters, syndromes, or categories that correlate to physical therapy diagnoses

C. Evidence-based theory and practice relative to therapeutic exercise and functional re-education

D. Selection, sequencing, proper execution of tests and measures necessary for differential diagnosis

E. Evidence-based theory and practice relative to manual therapy techniques

F. Signs/symptoms beyond the scope of physical therapy management

G. Performing arts functional scales

H. Emergency first aid procedures and interventions

I. Preferred practice patterns used to treat physical therapy diagnoses

J. Multiple methods, styles and levels of communication and learning

K. Methods of analysis of research findings applicable physical therapy for performing artists

L. Evidence-based theory and practice relative to modalities

M. Research methods and design

RESOURCES/LAWS/ARTS ORGANIZATIONS

A. Expected behaviors and social pressures related to injury management within the arts organization and the general performing arts community

B. Organizational structure of performing arts management and venues (e.g., artistic director, conductor, teachers, off-site physician)

C. Adaptive, supportive equipment and supplies available to the performing arts community

D. Alternative pathways for provision and reimbursement of healthcare services within the performing arts settings (e.g., direct payment of services from company management)

E. Applicable medical/legal/ethical issues

F. Other organizations devoted to performing arts healthcare (e.g. IADMS, PAMA, etc)

G. Alternative and complimentary healthcare providers

H. Community and medical resources

DEMANDS OF ART FORMS

A. Specific practice/performance requirements of the performer (e.g., aerobic, range of motion, fine motor coordination, skill level)

B. Performer-specific epidemiological injury characteristics (e.g., incidence, mechanism, technique specific, age-related changes)

C. Functional and aesthetic demands of various art disciplines

D. Training/performance demands (e.g., workload variation, practice/rehearsal schedules, layoffs)

E. Typical training progressions within various art disciplines

F. Risk factors associated with over-training (e.g., excessive jump training)

G. Inconsistency between training demands and performance requirements (e.g., anaerobic dance class vs. aerobic performance)

TYPICAL PRESENTATION OF INDIVIDUAL PERFORMERS

A. Typical anatomical and physiological characteristics of the performer within specific art disciplines (e.g., excessive ROM)

B. Impact of anatomical variations (e.g., os trigonum) on performers' impairments

G. Psychosocial tendencies in performers relative to compliance, body awareness, pain perception, and performance anxiety

H. Impact of concurrent medical conditions (e.g., amenoria and osteoporosis) on performers' impairments

I. Psychological/emotional conditions typically seen in the performing arts population

J. Impact of behavioral health risk factors (e.g., smoking effects on healing rates) on performers' impairments