Dear Fellow Physical Therapist:

Congratulations! By acquiring this Candidate Guide, you have been proactive in your interest in and pursuit of specialist certification. The specialist certification program has been designed to identify and define physical therapy specialty areas and to formally recognize physical therapists who have attained advanced knowledge and skills in those areas.

Certification also assists the public and healthcare community in identifying therapists with acknowledged expertise in a particular field of practice and demonstrates that physical therapists are devoted to addressing the unique needs of the people with whom we work.

Certification is achieved through successful completion of a standardized online application and examination process. Coordination of this program is provided by the American Board of Physical Therapy Specialties (ABPTS), the governing body for approval of new specialty areas and certification of clinical specialists. Specialty councils representing the 9 recognized specialty areas have been appointed to delineate and describe the advanced knowledge, skills, and abilities of clinical specialists; determine specific requirements for certification; and develop the certification examinations.

The dedicated volunteers currently giving their time and service to the development of this process are listed in the rosters in the beginning of this booklet. APTA established this program in 1978 to provide formal recognition for physical therapists with advanced clinical knowledge, competence, and skills in a special area of practice. The program evolved from the membership of special interest sections of APTA as a way to encourage and facilitate the professional growth of individual members and thereby facilitate growth of the entire profession.

Certified specialists have clearly demonstrated their commitment to service by the variety, depth, and consistency of their professional involvement. Their desire to attain formal recognition of their advanced clinical knowledge, competence, and skills reflects their devotion to their profession and their patients. In these times of dramatic health care reform, dedication to public service by providing high quality physical therapy services is paramount.

If you share these personal and professional principles, then you are in the right place! Please join the growing number of physical therapists who have chosen this pathway of professional development.

Thank you for your interest and I wish you success in this endeavor.

Sincerely,

Robert Sellin, PT, DSc
Board-Certified Clinical Electrophysiologic Clinical Specialist
Chair, American Board of Physical Therapy Specialties
ROSTERS

AMERICAN BOARD OF PHYSICAL THERAPY SPECIALTIES

AMERICAN BOARD OF PHYSICAL THERAPY SPECIALTIES

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SPECIALTY COUNCIL ON ONCOLOGIC PHYSICAL THERAPY

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1. GENERAL DEFINITIONS

1.1. American Physical Therapy Association
The American Physical Therapy Association (APTA) is a national professional organization representing more than 100,000 physical therapists, physical therapist assistants, and physical therapy students throughout the United States. Its goals are to serve its members and to serve the public by increasing the understanding of the physical therapist’s role in the health care system, and by fostering improvements in physical therapy education, practice, research, and professional development.

APTA established the specialist certification program in 1978 to provide formal recognition for physical therapists with advanced clinical knowledge, experience, and skills in a special area of practice, and to assist consumers and the health care community to identify physical therapy specialists.

1.2. American Board of Physical Therapy Specialties
Coordination and oversight of the specialist certification process is provided by the American Board of Physical Therapy Specialties (ABPTS), which is the governing body for approval of new specialty areas and certification of clinical specialists. ABPTS comprises board-certified physical therapists from different specialty areas; a physical therapist member of the APTA Board of Directors; an individual with expertise in test development, evaluation, and education; and a nonphysical therapist member representing the public.

The American Physical Therapy Association (APTA) prohibits preferential treatment or adverse discrimination on the basis of race, creed, color, gender, age, national or ethnic origin, sexual orientation, disability or health status in all areas including, but not limited to, its qualifications for membership, rights of members, policies, programs, activities, and employment practices.

1.3. Specialty Council
The Specialty Council, representing the area of oncologic physical therapy, is appointed to delineate the advanced knowledge, skills, and abilities for their specialty area; to determine the academic and clinical requirements for certification; and to develop the certification examinations and oversee the maintenance of specialist certification.

1.4. Additional Physical Therapy Examinations
Individuals interested in Cardiovascular & Pulmonary, Clinical Electrophysiology, Geriatric, Neurologic, Orthopaedic, Pediatric, Sports and Women’s Health certifications must complete a separate online application, accessible through APTA’s Specialist Certification Program website (www.abpts.org).

1.5. National Board of Medical Examiners
The National Board of Medical Examiners® (NBME®) is a nonprofit organization that strives to provide the highest quality testing and research services to organizations involved in the licensure and certification of medical and health science professionals. NBME provides test development, test administration, editorial production, and psychometric services to ABPTS and the specialty councils.

1.6. Prometric
NBME currently delivers the specialist certification examinations by computer through Prometric. Prometric administers testing programs for educational institutions, professional associations, corporations, and other organizations. Examinations are delivered in test centers that have secure rooms dedicated to test delivery.

Note: Prometric test center locations are subject to change, and there is no guarantee that a center listed on the Prometric website at the time of application will be available for a future ABPTS administration. The most efficient way for candidates to check for test center locations is to log on to www.prometric.com/ABPTS and select “locate a test center.” This provides the most up-to-date information.

1.7. Restriction of the Term Board-Certified Specialist
APTA’s House of Delegates adopted a policy that no physical therapist shall purport to be a “Board-Certified Clinical Specialist” unless (s)he has successfully completed the certification process as developed by the American Board of Physical Therapy Specialties (HOD 06-94-23-39). In addition, ABPTS does not permit applicants for certification to state that they are “board eligible.”

2. CERTIFICATION REQUIREMENTS

2.1. General Requirements
Applicants must hold a current permanent/unrestricted license to practice physical therapy in the United States or any of its possessions or territories. In addition, applicants are required to pay the application review fee.

Applicants must meet the minimum eligibility requirements for the 2020 examination by the application deadline of July 1, 2019.

Applicants must submit a complete application and review fee for each specialist certification examination.

ABPTS does not permit applicants to use the same direct patient care hours for different specialty areas.

2.2. Other Requirements
Applicants must meet requirements for Option A or Option B.

Option A
Applicants must submit evidence of 2,000 hours of direct patient care as a licensed United States physical therapist (temporary license excluded) in the specialty area within the last ten (10) years, 25% (500) of which must have occurred within the last three (3) years. Direct patient care must include activities in each of the elements of patient/client management applicable to the specialty area and included in the Description of Specialty Practice (DSP). These elements, as defined by
Applicants must also submit 1 case report demonstrating specialty practice in oncology. This case report must be based on a patient/client seen within the last 3 years.

Note: (See 12.1 thru 12.6 beginning on page 12 for other requirements.)

Option B

Applicants must submit evidence of successful completion of an APTA-accredited postprofessional clinical residency completed within the last 10 years that has a curriculum plan reflective of the Description of Specialty Practice: Oncologic Physical Therapy (DSP). Experience from residencies in which the curriculum plan reflects only a portion of the DSP will not be considered.

Applicants applying under Option B also must submit one (1) case report demonstrating specialty practice in oncology. This case report must be based on a patient/client seen within the last three (3) years.

Applicants must submit evidence of successful completion of an APTA-accredited post professional Oncologic clinical residency. Applicants who are currently enrolled in an ABPTRFE-accredited clinical residency, or enrolled in a residency program that has been granted candidacy status, may apply for the specialist certification examination in the appropriate specialty area prior to completion of the residency. These applicants are conditionally approved to sit for the examination, as long as they meet all other eligibility requirements, pending submission of evidence of successful completion of the ABPTRFE-accredited clinical residency to APTA’s Specialist Certification Program no later than 1 month before the examination window opens. To verify your residency program's accreditation status, please visit www.abptrfe.org.

2.3. Steps to Complete Certification

Certification as a Physical Therapy Clinical Specialist consists of 2 major steps:

STEP 1. You must submit evidence that you have fulfilled the minimum eligibility requirements as defined by the specialty council. This includes completion of all required application forms, fees, documentation of the required practice hours, and other requirements specified by the specialty council.

You must meet all requirements by the application deadline, July 1, 2019. The specialty council will not consider experience toward the minimum eligibility requirements that was not acquired by the application deadline.

STEP 2. Following completion of Step 1 and approval of the application, the candidate must sit for and receive a passing score on the computer-based certification exam.

Certification is awarded for a period of 10 years. ABPTS has adopted a model of continued competency throughout the years of certification rather than a one-time recertification process as the certification period lapses. This model is titled the “Maintenance of Specialist Certification (MOSC).” Please review details of the MOSC program in Section 2.4.

2.4. Maintenance of Specialist Certification (MOSC)

ABPTS has developed a model for maintaining certification that focuses on continuing competence of the physical therapist specialist. This new model is titled the “Maintenance of Specialist Certification” and includes the following elements:

- Professional Standing and Direct Patient Care Hours
- Commitment to Lifelong Learning Through Professional Development
- Practice Performance Through Examples of Patient Care and Clinical Reasoning
- Cognitive Expertise Through a Test of Knowledge in the Profession

Requirement 1: Professional Standing and Direct Patient Care Hours

- In years 3, 6, and 9, a specialist must submit evidence of current licensure as a physical therapist in the United States or any of its possessions or territories.
- In years 3, 6, and 9, a specialist must submit evidence of 200 hours of direct patient care acquired in the specialty area within the last 3 years. Direct patient care hours accrued in year 10 may be applied to the year 3 requirements for the next MOSC cycle.

Requirement 2: Commitment to Lifelong Learning Through Professional Development

- Each board-certified specialist is obligated to participate in ongoing professional development, within his or her designated specialty area, which leads to a level of practice consistent with acceptable standards. Each specialist may choose to pursue professional development that leads to a level of practice beyond prevailing standards.
- A web-based system tracks an individuals continuing competence in a specialty area. This system provides an individual account tracking mechanism for each specialist to record professional development activities during years 3, 6, and 9 of his or her certification cycle. There is not an hour requirement in this area, but the specialist must show evidence of professional development activities (equivalent to 10 MOSC credits) within 2 of the 3 designated activity categories in years 3, 6, and 9. By year 9, a specialist must have accrued a minimum of 30 MOSC credits and demonstrated professional development in each of the 3 designated activity categories. These activities include professional services, continuing education coursework, publications, presentations, clinical supervision and consultation, research, clinical instruction, and teaching.

Additional information about the MOSC process is available on the ABPTS website at http://www.abpts.org/MOSC/.

Requirement 3: Practice Performance Through Examples of Clinical Care and Reasoning

- The purpose of this requirement is to document continuing competency in patient/client management in the specialty area.
- The specialist will use an online system to complete 1
reflective portfolio submission in years 3, 6, and 9 of his or her certification cycle. These reflective portfolio submissions will be used to demonstrate the specialist’s use of clinical care and reasoning. Each submission must have a reflective component and must have documentation that reflects clinical reasoning.

- These reflective portfolio submissions will not be scored but will be screened for completion of required information and report.

Requirement 4: Cognitive Expertise Through a Test of Knowledge in the Profession

- During year 10 of the certification cycle, the specialist will be required to sit for a recertification examination, comprising approximately 100 items. The exam will be specialty specific, assess an individual’s cognitive expertise in the specialty area, and reflect contemporary specialist practice.

- The exam blueprint breakdown for this exam will mirror that of the initial certification exam, as noted in the various Descriptions of Specialty Practice. Items will be coded and pulled from existing specialty item banks.

- Successful completion of requirements 1-3 are prerequisites for sitting for the recertification exam. If a specialist fails to receive a passing score after the first attempt, he or she will be permitted to sit for the exam 1 additional time and will maintain his or her certification during this 1-year grace period.

Any additional questions/concerns should be addressed to staff at spec-recert@apta.org or 800/999-APTA (2782), ext 3390.

2.5. Ineligibility for Certification

Specialty council members, ABPTS members, and cut-score study participants are prohibited from sitting for the specialist certification exam for a period of 2 years from the date of participation in the certification process.

3. APPLICATION PROCESS

3.1. Application Deadline

Completed applications and application review fees for the 2020 specialist certification examinations must be submitted online to the APTA Specialist Certification Program on or before July 1, 2019. Applications submitted after the deadline may not be reviewed.

3.2. Procedures for Application Review

The Specialist Certification Program staff will conduct the initial review of all submitted documents within approximately 6 weeks. Then your application will be forwarded to the Specialty Council for their expert review. This final review process will take approximately 10 business days from the time the Council receives the documents, and should the council have questions or need clarification about documents submitted the Specialist Certification staff will contact you via email. The applicant must resubmit requested documentation within 10 business days after email notification is received. Only one resubmission is permitted for an exam cycle.

If the applicant does not resubmit by the specified deadline, the record will indicate that he or she has not met the minimum eligibility requirements and is not approved to sit for the 2020 exam.

3.3. Services for Persons With Disabilities

The American Board of Physical Therapy Specialties (ABPTS) provides reasonable and appropriate accommodations in accordance with the Americans with Disabilities Act for individuals with documented disabilities who demonstrate a need for accommodations.

It is the responsibility of the person with a disability to provide advance notice and appropriate documentation of the disability with a request for test accommodations. If an applicant identifies functional limitations or special needs that would prevent him or her from taking the certification exam under standard testing conditions, ABPTS in consultation with its testing agency, will evaluate and respond to that applicant’s needs for special arrangements.

Any requests must be submitted to ABPTS, accompanied by the appropriate forms and uploaded at the time of the online application submission for the exam (by July 1, 2019). The request for testing accommodations must include verification of the disabling condition from a professional specializing in the relevant area and a description of the requested accommodation. Applicants will be notified in the fall of the decision regarding the request and the accommodations that will be provided. If accommodation is not requested in advance, availability of accommodation cannot be guaranteed.

Note: Certain testing accommodations may require shared cost with candidate.

3.4. Certification in More Than 1 Specialty Area

Applicants must submit a complete set of online application materials and fees for each specialist certification exam. A certified specialist who applies for certification in a second specialty area is not permitted to submit the same direct patient care hours that he or she submitted for certification in the first specialty area. The Specialist Certification Program staff will review previously submitted applications for duplication of hours.

3.5. Submission of Application

It is the applicant’s responsibility to ensure that the application is completed according to instructions.

In addition, it is imperative that you enter your name on the application exactly as it appears on the identification form you intend to present at the testing center. Please note that the way your name is entered on the application is also the way your name will appear in the APTA membership database.

Applicants who opt to pay the review fee by check should send the application fee with the appropriate payment form described in Section 3.6 below in a single mailing to:
If applicable, verification of current physical therapy license must be sent separately by your state licensing agency.

3.6. Application Review Fee
The nonrefundable application review fee must be submitted with your online application to the APTA Specialist Certification Program on or before July 1, 2019.

Payment of the review fee may be made by check (payable to APTA) or by credit card (MasterCard, VISA, Discover, or American Express). The Payment Form must accompany your fee. The applicant review fees are listed below:

- APTA Member: $525
- Non-APTA Member: $870
- Member/Non-APTA Member Reapplication: $170

Note: Reapplication fee is due by August 31, 2019.

3.7. Time Limit for Active Application/Reapplication
Applicant files will remain active for only 2 consecutive exam administrations. However, eligibility for the second exam administration requires an online reappraisal submission by August 31, along with a $170 reappraisal fee, as well as the current examination fee by November 30. This policy applies to those who choose to defer sitting for the exam, those who are not approved to sit for the examination, and those who do not pass the exam. Eligible reapplicants will receive reappraisal information by email directly from the Specialist Certification Program. To reapply, you must submit an online reappraisal, verification of current licensure to practice physical therapy, updated direct patient care hours, and any other requested documentation. The APTA Specialist Certification Program must receive this documentation by the reappraisal deadline for the next scheduled exam. Reapplicants must meet the current practice requirements to be eligible to sit for the exam.

After 2 consecutive exam administrations, you must submit an entirely new application and initial applicant review fee to apply for specialist certification.

3.8. Address Changes
Should your mailing address, email address, or phone number change, please notify the APTA Specialist Certification Program immediately. The Specialist Certification Program maintains separate records from APTA’s membership database, so candidates must email (spec-cert@apta.org) or phone (800/999-2782, ext 8520) the department.

4. SCHEDULING THE EXAM

4.1. Examination Fee and Scheduling Permit
The examination fee is submitted after you have been notified that you are eligible to sit for the exam. The fee must be received by the APTA Specialist Certification Program on or before November 30, 2019.

You may pay the examination fee by check (payable to APTA) or by credit card (MasterCard, VISA, DISCOVER or AMEX), by mail or online. Please note that both first-time and repeat test takers must pay the following examination fees:

- APTA Member: $810
- Non-APTA Member: $1,535

If you are planning to sit for the examination in an international location, please make sure that you enter that in your online application.

Before the end of December, after your examination fee has been received, APTA’s Specialist Certification Program will send you an email with instructions on how to access and download your electronic scheduling permit online. You must print your scheduling permit before you contact Prometric to schedule a test date. Check to make sure that the information on your permit is correct, and that your name (first name, middle initials, last name) exactly matches your name on the identification you will use on the day of the exam. If the name on your permit does not match the name on your identification, you must contact APTA immediately. Name changes or corrections cannot be made within 7 business days of your scheduled testing date. You are denied admission to the test if the name on the permit does not match the name on your identification.

4.2. Test Dates
The examination will be administered at testing centers worldwide sometime between February 29 - March 14, 2020.

4.3. How to Schedule an Appointment at a Testing Center
The Specialist Certification Program will notify approved candidates when they may begin to schedule a date to sit for the examination. Candidates are not eligible to schedule a session until they have paid their exam fee and have their scheduling permit.

You must print or download your scheduling permit before you contact Prometric to schedule a testing appointment. To schedule a testing appointment, you will need to provide Prometric with the scheduling number that is included on your scheduling permit. Appointments are assigned on a first-come, first-served basis; therefore, you should schedule an appointment as soon as possible after you have accessed your scheduling permit. If you defer scheduling you may not be able to make an appointment at your preferred test site or for your preferred test date. You should report any problems in scheduling a testing appointment to the Specialist Certification Program at least 4 weeks before the first day of the testing window to give ABPTS an opportunity to resolve the problem.

Prior to your testing appointment, you can log in at the URL provided by the Specialist Certification Program to access and reprint your permit if necessary.

4.4. Refunds and Cancellations
The Applicant Review Fee is not refundable. You must notify the specialist certification program staff through the on-line
application system deferment process if you decide, for any reason, not to sit for the 2020 exam. Upon receipt of written notification, your examination fee will be refunded minus 20% of the fee. Please allow 6-8 weeks for processing.

4.5. Rescheduling an Exam
If you are unable to keep a testing appointment and would like to reschedule, you must contact Prometric by 12:00 pm local time of the second business day prior to your appointment. The rescheduled test date must fall within the testing window. Fees from your previously scheduled test will be transferred to the rescheduled exam as follows:

a. If you contact Prometric by 12:00 pm local time of the second business day prior to your test date, you will be permitted to reschedule without penalty. If you provide less than 2 business days’ notice, Prometric will charge a $101 fee to reschedule your examination (rescheduling fees vary for international sites).

b. If you cancel your appointment within 2 business days or do not appear on your test date, you must contact Prometric Candidate Cares at the phone number listed in the permit and pay a $101 fee to reinstate your eligibility record in order to reschedule your appointment within the testing window (rescheduling fees vary for international sites).

5. PREPARING FOR THE EXAM

5.1. Description of Specialty Practice (DSP)
The Descriptions of Specialty Practice (DSP) are documents developed for each specialty area that outline the knowledge, skills, and abilities related to clinical practice in the specialty area. The DSP content is based on a detailed practice analysis conducted by the specialty council. A practice analysis involves extensive research, including survey data and judgments of subject matter experts, of the knowledge, tasks, and roles that describe advanced specialty practice. The specialty council develops the written exam from the DSP and includes a percentage of questions from each of the major content areas identified in the practice analysis. Because applicants will find the DSP for their specialty area helpful in organizing exam preparation, a copy is made available electronically to each new applicant upon submission of their application and payment of the application review fee. If you wish to purchase an advance copy of the DSP, please contact APTA’s Member Services at 800-999-2782.

5.2. Exam Content Outline
The content outline for the exam that specifies the percentage of questions in each major content area is found on page 9. The content outline is presented as an approximation of the test construction and should not be interpreted as an exact distribution of test items.

5.3. Preparation for the Exam
You declare your intent to sit for the specialist certification exam at the time of application and are expected to begin preparation for the exam at that time. You are responsible for determining the method and amount of preparation necessary for the exam. Results from candidate surveys suggest that helpful methods of examination preparation include, but are not limited to, advanced level texts, Physical Therapy, and other journals containing current physical therapy research. You may also want to review the Description of Specialty Practice and the content outline to determine what content will be covered on the exam and to direct your study efforts.

5.4. Review Materials and Courses
Resource Guide information, prepared by APTA’s Oncology Section, can be found on page 21. Some sections hold review courses related to advanced practice in their specialty area. Applicants should contact their section directly to receive information. Neither ABPTS nor the specialty councils review or endorse the content of review materials and courses.

5.5. Study Groups
The APTA Specialist Certification Program maintains a list of candidates who are interested in participating in study groups. To be included in study group listings, select “participate in study group” and answer “yes” on the online application. The study group list of candidates who have indicated their interest will be generated by November 17, 2019.

5.6. Exam Development
The specialist certification examinations are developed by specialty councils of ABPTS. APTA has contracted with the NBME to assist in the development, administration, scoring, and reporting of results for the certification examinations. Using the DSP as a basis, the specialty councils make the final determinations regarding the exam content and the number of items in each area.

Questions (items) for the exam are solicited from content area experts currently practicing in the specialty area representing the full range of practice settings and focus in all regions of the country. Item writers attend workshops and receive instruction to enable them to write high-quality, practice-related test items. Test items undergo extensive editing and review by subject matter experts and professional test editors before specialty councils approve them to be placed on the examinations.

5.7. Exam Question Format
Questions (items) are designed to test synthesis and analysis levels of cognitive skills, as well as content knowledge. The exam is composed of objective multiple-choice questions with 4 or 5 answer choices. The questions either stand alone or are part of a series that relates to a presented case study. Beginning on page 10 are sample questions that are representative of the format of questions for each exam, but may not necessarily reflect the ability level or content of the items. There are 200 items on the exam, consisting of 50 questions in each 1½-hour time block.

5.8. Answer Strategy
You should consider answers to each question carefully and eliminate the least likely ones instead of randomly selecting an answer. Please keep in mind that there is no penalty for incorrect answers. Please keep in mind that there is no penalty for incorrect
responses. Since test scores are based on the actual number of questions answered correctly, it is to the candidate’s advantage to select an answer for each question rather than leaving any blank. There is only one best answer for each question.

5.9. Tutorial
After you are approved to sit for the examination, the Specialist Certification Program will make available a tutorial so that you may practice using the testing software prior to your test day. The tutorial can be accessed on the APTA Specialist Certification website (www.abpts.org/SpecCertExamTutorial/). You should acquaint yourself with the testing software well before your test date. Test center staff are not authorized to provide instruction on use of the software.

The tutorial is also available at the beginning of the examination session. You may use up to 10 minutes before beginning the examination. The test driver is easy to understand and requires little or no prior computer experience.

6. SITTING FOR THE EXAM

6.1. Computer Testing
The specialist certification examinations are administered by computer. The examination questions are presented on computers, and candidates provide their responses using a mouse or keyboard. NBME works with Prometric to deliver these examinations worldwide at more than 300 test centers. Approved candidates should contact Prometric as soon as possible once they have their scheduling permit to schedule a testing appointment. Candidates may take the test on any day that it is offered during the testing window, provided that there is space at the Prometric test center of choice.

6.2. Test Centers and Testing Conditions
Prometric provides computer-based testing services for academic assessment, professional licensure, and certification. Please be aware that there may be test takers from other professions taking examinations during your test administration. Their exam schedule may differ from your schedule, and they may arrive and depart at different times.

These test centers provide the resources necessary for secure administration of the examination, including video and audio monitoring and recording, and use of digital cameras to record the identity of candidates.

6.3. Exam Time
You should arrive 30 minutes before your scheduled testing appointment.

The official exam time begins the moment that you enter your Candidate identification number. There are 200 questions on the exam. The exam is administered during a seven (7) hour testing session, which consists of a brief tutorial (up to 10 minutes), four 1½-hour test-blocks, and 50 minutes of optional break time to be used after any block. Please note that if you finish a section early, you may not use the extra time for a different section of the exam, however, this time will be available as additional break time.

If you have unused time after you complete the examination, you will be given the opportunity to complete an online survey about the test administration. The purpose of the survey is to evaluate the test scheduling and delivery procedures. Your responses will be kept confidential, and the time you take to complete this survey will not detract from your allotted examination time.

6.4. Admission to the Test
You should arrive at the test center at least 30 minutes before your scheduled testing time on your testing day. If you arrive late, the test center administrator may refuse you admission. If you arrive more than 30 minutes after your scheduled testing time, you will not be admitted. In that event, you must pay a $101 fee to Prometric to reinstate your eligibility record in order to reschedule your appointment within the testing window (rescheduling fees vary for international sites).

Upon arrival at the test center, you must present a printed copy of your scheduling permit or present it electronically (e.g. via Smartphone) and an unexpired, government-issued form of identification (such as a current driver’s license, valid passport, or military ID) that includes both your photograph and signature. If your identification contains your photograph but not your signature, you may use another form of unexpired identification that contains your signature, such as student/employee identification card or a credit card, to supplement your photo-bearing, government-issued identification.

As a security procedure, you will be photographed before you begin taking the examination. You will also sign a test center log, and store your personal belongings in your assigned locker. You will be scanned with a handheld metal detector and be asked to empty and turn out your pockets prior to entry into the testing room to confirm that you have no prohibited items. You will be required to remove eyeglasses for visual inspection by the test center administrators. Jewelry, except for wedding and engagement rings, is prohibited and hair accessories are subject to inspection. You should not wear ornate clips, combs, barrettes, headbands, and other hair accessories. Any examinee wearing any of these items may be prohibited from wearing them in the testing room, and asked to store such items in their locker. These inspections will take a few seconds, and will be done at check-in and upon return from breaks.

If you brought a printed copy of your scheduling permit, the Test Center Staff will collect it. You will be provided with laminated writing surfaces and markers. You will be instructed to write your name and Candidate Information Number (CIN) on one of the laminated writing surfaces provided. Your scheduling permit will be retained by the Test Center Administrator. You may request access to the permit during the examination if it becomes necessary for you to rewrite the CIN on the laminated writing surface. Test Center Staff will escort you to your assigned testing station and provide brief instructions on use of the computer equipment. Laminated writing surfaces and markers issued are to be used for making notes and/or calculations during the testing session. They should only be used at your assigned testing station, and only after you have begun your examination by entering your CIN. You must enter your CIN to start the examination, which will begin with a brief tutorial prior to the first test block. If you have filled the laminated writing surfaces and need additional space for making notes, you will need to notify test center staff and a replacement will be provided. Laminated writing surfaces must be returned to test center staff at the end of the testing session.
Important Note: You will not be admitted to the testing room without presenting either a printed or electronic copy of your permit and an unexpired, government-issued form of identification (such as a driver’s license or passport) that includes both your photograph and signature.

The name on your scheduling permit must exactly match the name on your identification form. The only acceptable difference would be the presence of middle name or middle initial, or suffix on one document and its absence on the other. If you do not present your permit and required identification on the exam day, you will be denied admission to test. In that event, you must pay a fee to Prometric to reschedule your test (see section 4.5 for additional instructions).

6.6. Irregular Behavior During the Examination Process

Irregular behavior includes any action by candidates or others when solicited by a candidate that subverts or attempts to subvert the examination process. Test center administrators are required to report any irregular behavior by a candidate during the examination. Irregular behavior may include, but is not limited to, the following:

- Seeking and/or obtaining access to examination materials
- Impersonating a candidate or engaging another individual to take the examination by proxy
- Giving, receiving, or obtaining unauthorized assistance during the examination or attempting to do so
- Making notes of any kind during an examination except on the erasable writing surface provided at the test center
- Memorizing and/or reproducing examination materials
- Failure to adhere to test center regulations
- Possessing unauthorized materials during an examination administration (eg, recording devices, photographic equipment, electronic paging devices, cellular telephones, reference materials)
- Any other behavior that threatens the integrity of the specialist certification examinations

Looking in the direction of the computer monitor of another candidate during the examination may be construed as evidence of copying or attempting to copy, and a report of such behavior may result in a determination of irregular behavior. Candidates must not discuss the examination while a session is in process. Test center administrators are required to report all suspected incidents of irregular behavior. A candidate who engages in irregular behavior or who violates test administration rules may be subject to invalidation of their examination.

6.7. Canceled or Delayed Exam Administration or Problems at the Testing Center

Every effort is made to administer an examination at the scheduled test time and location. On occasion, however, exam administrations may be delayed or canceled in emergencies such as severe weather, a natural disaster that renders a Prometric Testing Center (PTC) inaccessible or unsafe, or extreme technical difficulties. If Prometric closes a testing center where you have already scheduled a testing appointment, it will reschedule the examination appointment at no additional charge.

In that event, Prometric will attempt to notify you in advance of your testing appointment to schedule a different time and/or center. Rescheduling an appointment for a different time or center may occur at the last minute due to limited availability of seats in a PTC.

One week prior to testing, you are advised to confirm your appointment with Prometric and maintain flexibility in any travel arrangements you may make.

If you experience an emergency situation on the day of your examination that you feel may jeopardize your ability to perform effectively on the examination, you may be eligible to postpone sitting for the examination until 2021. However, please note that if you opt to still sit for the examination and are not successful, this is not a basis for appealing examination results and your ability to sit again in 2021 at no additional cost may be in jeopardy.

Any candidate, once checked in and seated at a test station, who
is delayed to take the examination by more than 30 minutes because of technical difficulties, is responsible for reporting the delay to the Specialist Certification Program at 800/999-2782, ext 8520, as soon as possible. For such cases, the candidate may be eligible to choose to reschedule his or her examination at no additional charge. Before deciding to reschedule, you should be sure that there is another appointment available during the testing-block period. The test administration will not be considered “irregular” if you choose to remain and test despite the delay. You will receive the maximum number of hours available to candidates to complete the exam even if the test is delayed.

Any candidate, once checked in and seated at a test station, who has a concern or complaint about the test center environment, should immediately report the problem to the test center administrator. If you feel that the problem was not resolved to your satisfaction, you should contact the Specialist Certification Program at 800/999-2782, ext 8520, as soon as possible.

6.8. Exam Deferral
Candidates may defer their examinations through the ABPTS online application system located at www.abpts.org. To access your application click on “Online Application” from the Quick Links menu. It is recommended that you review the deferral guidelines before submitting your deferral. Please note you will receive an email confirming the deferment.

6.9. Equipment Malfunction
Should you experience any difficulty with the computer, please notify the test center administrator immediately. Do not wait until you have completed the exam to bring equipment malfunctions to the attention of the test center administrator. Once again, if you feel that the problem was not resolved to your satisfaction, you should contact the Specialist Certification Program at 800/999-2782, ext 8520, as soon as possible.

Please note that, occasionally, a computer at the test center may need to be restarted. Prometric has appropriate safeguards in place to ensure the integrity of candidate examination data. As soon as a candidate answers a test item, the response is immediately copied and saved on the candidate’s directory on the server at a center. If there is a computer restart, the driver locates the results from the directory and picks up where the examinee left off. The system does not change or delete any responses. Thus, examination data are captured at the instant a candidate responds to a question; the computer can be restarted, if necessary, without losing or corrupting examination data.

6.10. Incomplete Examinations
After you start taking an examination, you cannot cancel or reschedule that examination unless a technical problem prevents you from completing your examination. As noted in section 6.9, if you experience a computer problem during the test, notify test center staff immediately. The testing software is designed to allow the test to restart at the point it was interrupted. In most cases, your test can be restarted at the point of interruption with no loss of testing time. If you do not finish the exam for any reason you are not permitted to resume the incomplete sections of the test. You must reapply for the next regularly scheduled administration (see section on “Reapplication” 3.7). The examination fee is nonrefundable for incomplete examinations.

7. EXAM RESULTS

7.1. Exam Results and Notification
After ABPTS meets in May 2020 to make certification decisions, score reports will be prepared for online distribution in mid-June 2020. The score report specifies your examination score, the passing score on the examination, and feedback on your performance in the major competency areas tested. In mid-June 2020, the Specialist Certification Program staff will send you an email notification announcing that score reports are available online, including instructions on how to access and download your score report.

Although there is a time lapse between the close of the examination window and the availability of examination results, much is happening during this period of time. Key validation takes place after the exam window closes in March. Key validation is a process of preliminary scoring and item analysis of the exam data, followed by careful evaluation of the item-level data, to identify potentially flawed or incorrect items prior to final scoring. During April and early May, standard setting committees are convened at the NBME to participate in content-based standard setting studies. The outcome of each committee’s standard setting meeting is the recommendation of a passing standard of each of the specialty examinations during their May meeting. NBME then scores the specialist certification examinations and candidates are notified of their exam results as soon as this information is received by the Specialist Certification Program.

7.2. Scaled Scores
While your score is based on the number of questions answered correctly, it is a scaled score. ABPTS requires a scaled score of 500 to pass the examination. Scaling is a procedure that converts raw scores (number of correct responses) to a more easily interpretable scale. The purpose of scaling scores is to simplify things by keeping the passing score at the same number (eg, 500) for all exam forms, while the raw scores necessary for passing may vary for different forms.

7.3. Passing Scores
The certification examinations assess a clearly defined domain of knowledge and skills. You will be certified upon achievement of a passing score on the examination. The passing score is based on a detailed analysis of exam data and a recommended performance standard from a panel of clinical subject matter experts. This panel includes physical therapists in the specialty representing diversity in practice setting, years of experience, theoretical perspective, and geographic region.

Upon receiving board-certification, the candidate will:

• receive a certificate recognizing board certification as a specialist in an area of physical therapy
• be entitled to note they are “board-certified” in their specialty
• receive a board certified specialists lapel pin in his or her specialty area
• be recognized by his or her colleagues at APTA’s annual Ceremony for Recognition of Clinical Specialists at APTA’s Combined Sections Meeting
• be included in the online Directory of Certified Clinical Specialists in Physical Therapy

8. CONFIDENTIALITY

8.1. Confidentiality of Applicant Identity
Applicant names, application documents, and test scores are considered confidential. Only Specialist Certification Program staff, members of the American Board of Physical Therapy Specialties, members of the Specialty Council, and designated staff at the NBME and its subcontractors shall have access to this information. Applicant identity can be released for study group purposes only, with the consent of each applicant. Copies of test scores will be released only at the written request of the candidate.

8.2. Confidentiality of Examination Content
All candidates must sign/acknowledge the Affidavit & Pledge of Confidentiality in their online application for certification. Candidates must not disclose examination content to others or reproduce any portion of the examination in any manner. The examination of any candidate who violates these security rules will not be scored.

9. GROUNDS FOR DISCIPLINARY ACTION
Applicants or candidates who are determined to have engaged in fraud, misrepresentation, or irregular behavior in the application or examination process, to have disclosed examination content to others or reproduced any portion of the examination in any manner, or to have violated the Affidavit & Pledge of Confidentiality will be subject to disciplinary action, to be determined by ABPTS, which may include, without limitation, withdrawal of any certification granted and permanent or temporary exclusion from the certification process. Before taking disciplinary action, ABPTS will give the individual written notice of the evidence against the candidate and an opportunity to respond.

10. PROCEDURES FOR REVIEW OF DECISIONS

10.1. Reconsideration of Decision Regarding Eligibility to Sit for the Exam
An applicant whom the Specialty Council has determined to be ineligible may request the Council to reconsider its denial of eligibility. The request for reconsideration must specify the grounds on which it is based. An applicant may submit new information in support of his or her request for reconsideration. An applicant may challenge the Specialty Council’s application of the eligibility requirements to his or her case, but not the requirements themselves. An applicant may not appeal to ABPTS unless he or she has first submitted a request for reconsideration to the Council. An applicant must submit his or her request for reconsideration no later than 2 weeks from the date of the denial letter. For purposes of determining compliance with the foregoing deadline, a request for reconsideration will be deemed submitted on the postmark date. The Specialty Council will notify the applicant in writing of its decision on reconsideration.

10.2. Appeal to ABPTS of Specialty Council’s Decision Regarding Eligibility to Sit for the Exam
An applicant who wishes to submit an appeal must contact the Specialist Certification Program for a complete copy of the procedures.

An applicant whom the Council has determined upon reconsideration to be ineligible may appeal the decision to ABPTS. An applicant may challenge the Council’s application of the eligibility requirements to his or her case, but not the requirements themselves. The applicant must submit his or her appeal no later than 2 weeks from the date of the Council’s decision on reconsideration. The appeal must be in writing and must be addressed to the Chair of ABPTS at the APTA Specialist Certification Program. For purposes of determining compliance with the foregoing deadline, a request for reconsideration will be deemed submitted on the postmark date. The appeal must specify the grounds on which it is based.

The Appeal Committee, a committee of ABPTS, will be responsible for the review and disposition of requests from applicants for appeal of a Specialty Council decision. The Appeal Committee will make its decision no later than 30 days from the date of receipt of the request for appeal. The Appeal Committee will send written notification of its decision to the Chair of the Specialty Council and the applicant by certified mail, return receipt requested, no later than 7 days from the date of its decision.

10.3. Procedures for Review of Certification Actions
A candidate who wishes to request that ABPTS reconsider its decision to deny certification must request a complete copy of procedures from the Specialist Certification Program.

The purpose of the ABPTS reconsideration procedure is to enable a candidate to challenge an ABPTS decision denying certification and to seek relief from untoward circumstances associated with the onsite administration of the examination and errors in the transmission of examination responses due to technical malfunction. To be considered, the request must include supporting evidence of technical malfunction.

Candidates must submit a request for reconsideration in writing and address the request to the Chair of ABPTS at the APTA Specialist Certification Program. To request reconsideration, the candidate must submit a written request no later than 2 weeks after the date of the letter notifying the candidate of exam results. For purposes of determining compliance with the foregoing deadline, a request for reconsideration will be deemed submitted on the postmark date. The request for reconsideration must specify the grounds on which it is based and the corrective action sought. Within 7 days of the receipt of a request for consideration ABPTS will acknowledge in writing the...
receipt of the request, including the date on which the request was received.

10.4. Appeal to APTA Board of Directors of ABPTS Decision to Deny Certification

A person may not appeal to the APTA Board of Directors unless he or she has submitted a request for reconsideration to ABPTS. A candidate who wishes to submit an appeal must request a complete copy of procedures from the Specialist Certification Program. Any candidate adversely affected by the ABPTS decision on reconsideration may appeal to the APTA Board of Directors within 14 days of receipt of the ABPTS notification of the Appeal Committee’s decision. A candidate must submit this appeal in writing, and the candidate must address it to the President of the APTA at the APTA Governance Department. The candidate must also send a copy of the written appeal to the Chair of ABPTS at the APTA Specialist Certification Program. The appeal must set forth arguments in support of the candidate’s position. ABPTS will send written acknowledgment of receipt of the appeal to the candidate within 7 days after ABPTS receives the candidate’s written appeal request.

11. EXAM CONTENT OUTLINE & SAMPLE QUESTIONS

11.1. Exam Content Outline

The examination will comprise approximately 200 questions. Questions may include graphics. Examination questions can represent both a practice expectation and a knowledge area associated with that expectation. The following is a summary, including the percent of exam questions for each of the major components of the Description of Specialty Practice: Oncologic Physical Therapy.

<table>
<thead>
<tr>
<th>Content Area</th>
<th>% of Exam Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Knowledge Areas:</td>
<td>15%</td>
</tr>
<tr>
<td>A. Foundation Sciences (5%)</td>
<td></td>
</tr>
<tr>
<td>B. Clinical Sciences (5%)</td>
<td></td>
</tr>
<tr>
<td>C. Behavioral Sciences (5%)</td>
<td></td>
</tr>
<tr>
<td>II. Professional Roles, Responsibilities and Values:</td>
<td>16%</td>
</tr>
<tr>
<td>A. Professional Behavior (2%)</td>
<td></td>
</tr>
<tr>
<td>B. Professional Development (2%)</td>
<td></td>
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<tr>
<td>C. Communication (2%)</td>
<td></td>
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<tr>
<td>D. Social Responsibility (2%)</td>
<td></td>
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<tr>
<td>E. Leadership (2%)</td>
<td></td>
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<tr>
<td>F. Education (1%)</td>
<td></td>
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<tr>
<td>G. Advocacy (1%)</td>
<td></td>
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<tr>
<td>H. Administration (1%)</td>
<td></td>
</tr>
<tr>
<td>I. Consultation (1%)</td>
<td></td>
</tr>
<tr>
<td>J. Evidence-based Practice (2%)</td>
<td></td>
</tr>
<tr>
<td>III. Patient and Client Management Expectations:</td>
<td>69%</td>
</tr>
<tr>
<td>A. Examination/Reexamination (23%)</td>
<td></td>
</tr>
<tr>
<td>B. Evaluation/Diagnosis/Prognosis (14%)</td>
<td></td>
</tr>
<tr>
<td>C. Intervention/Instruction (27%)</td>
<td></td>
</tr>
<tr>
<td>D. Outcomes (5%)</td>
<td></td>
</tr>
<tr>
<td>TOTAL:</td>
<td>100%</td>
</tr>
</tbody>
</table>

Medical Conditions

The following list represents conditions that could be represented on the specialty exam. The list is meant to be a guide and is not comprehensive. Further, it is expected that consideration is given not only to the medical diagnosis of cancer, but also to the side effects and late effects of the treatments rendered to manage the disease, including but not limited to chemotherapy, radiation therapy, and surgery.

- Types of Cancer
  - Breast
  - Prostate
  - Lung
  - Colorectal
  - Ovarian
  - Melanoma
  - Cervical
  - Uterine
  - Bladder
  - Testicular
  - Pancreatic
  - Leukemia
  - Lymphoma
  - Multiple myeloma
  - Osteosarcoma
  - Soft-tissue sarcoma
  - Central nervous system
  - Brain
  - Kidney
  - Stomach
  - Head and Neck
  - Thyroid
  - Paraneoplastic syndromes

- Musculoskeletal
  - Bone metastasis
  - Hormonal depravation induced osteoporosis
  - Pelvic pain, hypertonus, vaginal fibrosis
  - Weakness
  - Postural deviations from radiation-related tissue contracture
  - Loss of ROM
  - Cording/axillary web syndrome
  - Steroid myopathy

- Neurological
  - Nerve palsies (facial, spinal accessory, long thoracic)
  - Brachial plexopathies (radiation induced vs metastatic)
  - Lumbosacral plexopathies
  - Peripheral neuropathies
  - Balance dysfunction
  - Chemotherapeutic neurotoxicities
  - Falls
  - Gait abnormalities
  - Spinal cord compression
  - Brain and CNS metastasis
• **Integumentary**
  — Radiation fibrosis
  — Phlebitotoxicity
  — Radiotherapy toxicities
  — Skin extrusion
  — Infection

• **Cardiovascular and Pulmonary**
  — Deconditioning
  — Cancer-related fatigue
  — Lymphedema
  — Chemotherapeutic cardiotoxicities
  — Interstitial pulmonary fibrosis
  — Cachexia
  — Vena cava syndrome
  — Pulmonary metastasis

• **Immunosuppressive**
  — Graft vs Host disease
  — Scleroderma
  — Thrombocytopenia
  — Neutropenia
  — Anemia

• **End of Life**

11.2. Sample Questions

Candidates for the specialist certification examination in oncology are encouraged to review the following sample questions to familiarize themselves with the examination format. Please note that the questions listed below reflect the format but not necessarily the complexity of the actual examination questions.

**Case Scenario 1**

The patient is a 45-year-old man in the acute care bone marrow transplant (BMT) ward. He is 2 weeks post-BMT, after failed therapy for multiple myeloma. He has been functionally ambulating in his room, but recently the nursing staff witnessed him to be unsteady on his feet and wobbling. Dorsiflexion appears to be limited in the left foot. His induction chemotherapy regimen includes vincristine, doxorubicin, and dexamethasone, followed by high-dose melphalan.

Questions

1. Based on clinical presentation and past medical history, what is the most likely underlying cause of his presentation?
   A. Chemotherapy-induced peripheral neuropathy
   B. Steroid myopathy
   C. Metastatic lesion to the CNS
   D. Graft vs Host disease

2. What tests and measures should the specialist use to objectively assess the severity of the deficits noted?
   A. Tinetti Balance Score
   B. Total Neuropathy Score
   C. Berg Balance Test
   D. Timed up and go

3. Upon evaluation of the medical chart, the specialist finds the patient’s platelet levels to be low. The medical team is strongly recommending physical therapist treatment today. The appropriate treatment plan would include:
   A. Resistive exercise
   B. No activity restrictions
   C. Bedside activities
   D. No ambulation

**Case Scenario 2**

The patient is a 60-year-old woman postsurgical resection of a spinal ependymoma. Since the surgery, she has experienced a decline in mobility status and now requires moderate assistance for transfers. Past medical history: Basal cell carcinoma 20 years ago, resolved; stage 0 melanoma treated with wide local incision 7 years ago. Prediabetic rehabilitation assessment prior to her surgical procedure revealed:

• **Neuromuscular/musculoskeletal system**
  — Sensation—lower limb dysesthesias were described as mild, itchy sensations. These occurred prior to the onset of back pain; intensity 2/10. Back pain is rated at 6/10 after gardening requiring an over-the-counter analgesic, and sometimes without specific activity it can increase to 3-4/10.
  — Proprioception—3/5 correct answers on the left great toe, compared with 5/5 on the right.
  — Motor—functional stability has been impaired, given her report that she has difficulty rising from the floor. MMT revealed slight left lower extremity weakness, as compared to the right lower extremity. Most significant proximal weakness.
  — Gait—decreased step length on the left. Selected comfortable speed during a 6-minute walk test was 2.4 mph. Mild increase in discomfort after testing was noted. No assistive device was used.
  — Balance—left unipedal stance time 15 seconds, right unipedal stance time 30 seconds.

Present exercise routine includes walking 2x weekly in her community, followed by general LE stretches and knee-to-chest stretches, and hook lying trunk rotation to reduce back pain.

Questions

4. What is the most appropriate care setting for her to receive rehabilitation postoperatively?
   A. Acute inpatient rehabilitation
   B. Outpatient ambulatory rehabilitation
   C. Skilled nursing facility
   D. Long-term acute care facility

5. What postsurgical rehabilitation interventions would be most appropriate and indicated for this patient in an outpatient setting?
A. Extension-based core stabilization with modified hamstring stretches to avoid flexion and vertebral compression
B. Progressive closed chain exercises with proprioceptive challenges, and gait training
C. Transfer training using a thoracic-lumbar spinal orthosis to protect the spinal cord
D. Only partial-weight-bearing gait activities for 4 weeks postoperatively

Key: 1-A, 2-B, 3-C, 4-B, 5-B

12. PREPARING A CASE REPORT

12.1. Instructions

Purpose: The purpose of the clinical case report is to document competency in patient/client management in the specialty area. Patient/client management in a clinical case reveals clinical reasoning skills that are essential to demonstrating competency in the oncologic physical therapy specialty area.

Guidelines for case selection: Patient/client management has five elements—examination, evaluation, diagnosis, prognosis, and intervention—which lead to optimal outcomes of care. Please select a typical case in your practice where you can provide evidence that demonstrates your competency in all five elements. The case should provide a clear picture of how the oncologic specialist provided care that is beyond that of an entry level practitioner. ABPTS may audit your submitted case report to verify its authenticity.

Material/information to include (see attached sample case report and rubric for specific criteria required):
- Following an abstract, you should begin the document with your background and introduction to include the rationale for selecting the case.
- Each case must include relevant clinical information, which may be presented using tables, graphs, bullet-points, etc.
- The information presented should be descriptive with identifying information removed.
- You should provide a written description of your clinical reasoning based on a synthesis of information and what is known in the literature, ie, discuss why certain tests/measures or interventions were selected based on the literature and appropriateness for the patient.
- You should provide at least 10 relevant citations, which are current (not > 10 years old,) from the literature to support your clinical decision making.
- The case reviewer will consider the relevance of these references when evaluating the case report.

The case should indicate contemporary, specialist practice as depicted in the Description of Specialty Practice for Oncologic Physical Therapy. An individual evaluating your competency should be able to rate your performance from reading your case using the scoring rubric described below.

Scoring Rubric: After review of the case report the rater will decide if it has met competency as specified by the scoring rubric (see below). Your submitted case must meet competency for approval at this step of initial certification. Competency is defined as obtaining a score of “Pass” for the screening criteria.

Process for Submission of a Clinical Case Report:
1. A case must be submitted along with the application to sit for the Oncologic Specialty Examination.
2. A case will be evaluated within three months of submission.
3. A case that does not meet the screening criteria will be returned with an explanation.
4. A case not rated as competent will be returned with the rater’s comments.
5. If this case is rated as not meeting the screening criteria or competent, it can be replaced with another case, but only once.
6. Each case will be reviewed by two trained raters in the specialty area. Disagreements between two raters will be referred to a third, trained rater.
7. A candidate whose case is not rated as competent may submit a written request to the American Board of Physical Therapy Specialties (ABPTS) for reconsideration per existing ABPTS policy and procedures for reconsideration requests.

Compliance With HIPAA Privacy Rule:
Please note that to be in compliance with the HIPAA Privacy Rule, the case report and any documentation you submit must conform to either Option 1 or Option 2 below:

Option 1. De-identify the patient information in the case report and documentation per the HIPAA Privacy Rule, defines 18 specific items that must be removed to release patient information without patient authorization or approval from the Research Privacy Board. These 18 items are:
1. Names.
2. All geographic subdivisions smaller than a state, including street address, city, county, precinct, ZIP Code, and their equivalent geographical codes, except for the initial three digits of a ZIP Code if, according to the current publicly available data from the Bureau of the Census:
   a. The geographic unit formed by combining all ZIP Codes with the same three initial digits contains more than 20,000 people.
   b. The initial three digits of a ZIP Code for all such units containing 20,000 or fewer people are changed to 000.
3. All elements of dates (except year) for dates directly related to an individual, including birth date, admission date, discharge date, date of death; and all ages over 89 and all elements of dates (including year) indicative of such age, except that such ages and elements may be aggregated into a single category of age 90 or older.

4. Telephone numbers.
5. Facsimile numbers.
6. Electronic mail addresses.
7. Social security numbers.
8. Medical record numbers.
9. Health plan beneficiary numbers.
10. Account numbers.
12. Vehicle identifiers and serial numbers, including license plate numbers.
15. Internet protocol (IP) address numbers.
16. Biometric identifiers, including fingerprints and voiceprints.
17. Full-face photographic images and any comparable images.
18 Any other unique identifying number, characteristic, or code, unless otherwise permitted by the Privacy Rule for re-identification.

Option 2. Obtain written authorization from the patient. A template of a form to be used for this purpose is located in Section 12.2 of the application. This written authorization does not need to be obtained if patient information in the case report and documentation is de-identified per the instructions in Option 1 above.

12.2 Case Report Checklist and Required Criteria:
Please see scoring rubric for specific details of required criteria.

CARE Checklist

1. Title. The area of focus and “case report” should appear in the title.

2. Key Words. Two to five key words that identify topics in this case report.

3. Abstract.
   a. Introduction: what is unique and why is it important?
   b. The patient’s main concerns and important clinical findings.
   c. The main diagnoses, interventions, and outcomes.
   d. Conclusion - What are one or more “take-away” lessons?

4. Introduction. Briefly summarize why this case is unique with medical literature references.

5. Patient information.
   a. De-identified demographic and other patient information.
   b. Main concerns and symptoms of the patient.

   c. Medical, family, and psychosocial history including genetic information.
   d. Relevant past interventions and their outcomes.

6. Clinical Findings. Relevant physical examinations (PE) and other clinical findings.

7. Timeline. Relevant data from this episode of care organized as a timeline (figure or table).

8. Diagnostic Assessment.
   a. Diagnostic methods (PE, laboratory testing, imaging, surveys).
   b. Diagnostic challenges.
   c. Diagnostic reasoning including differential diagnosis.
   d. Prognostic characteristics when applicable.

   a. Types of intervention (pharmacologic, surgical, preventative).
   b. Administration of intervention (dosage, strength, duration).
   c. Changes in the interventions with explanations.

10. Follow-up and Outcomes.
   a. Clinician and patient-assessed outcomes when appropriate.
   b. Important follow-up diagnostic and other test results.
   c. Intervention adherence and tolerability (how was this assessed)?
   d. Adverse and unanticipated events.

11. Discussion
   a. Strengths and limitations in your approach to this case.
   b. Discussion of the relevant medical literature.
   c. The rationale for your conclusions.
   d. The primary “take-away” lessons from this case report.

12. Patient Perspective. The patient can share their perspective on their case.

13. Informed consent. The patient should give informed consent.

12.3 Additional Information for Case Report Preparation

REFERENCES
All documented citations should be <10 years since publication unless the article is considered a seminal study. References are to be provided throughout ALL sections of the case report. The applicant should provide reference citations using American Medical Association (AMA) formatting supporting all clinical decision making and intervention techniques. Course manuals are not accepted as supporting references.

AREAS OF REFLECTION:
The applicant is to provide reflection within each section of the case report document. These reflections should highlight the specialist’s clinical thought processes and rationale. This is the opportunity for the applicant to clearly demonstrate their ability to understand and practice as a clinical specialist. This may include discussion on decisions that were made correctly.
or decisions that would be made differently in the future. The applicant may also highlight items that would be focused on in more detail next time or methods on which they would change their practice with future patients.

SCORING:
Case reports which are poorly assembled, which rely on outdated literature (＞10 years since publication unless a seminal study), or do not adequately demonstrate the clinical decision making process throughout the document in the reflections will not receive a passing score. Applicants will be provided one opportunity for revision if a non-passing score is received.

Refer to the case report scoring rubric for specific points of content which should be included in the case report to achieve a passing score. The applicant must include all points within each section of the case report (as clearly outlined on the scoring rubric) to receive a passing score.

MISTAKES TO AVOID
These are the most common mistakes applicants make in the case report. Take care to avoid these mistakes which result in a non-passing score.

- Failure to provide the required reflection within each section of the case document
- Failure to address each point on the scoring rubric
- Incomplete post case report or failure to include this section
- Failure to cite supporting literature through the case report to support clinical decisions and treatment interventions
## Case Report Scoring Rubric

<table>
<thead>
<tr>
<th>Case Report Criteria</th>
<th>Pass</th>
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<tbody>
<tr>
<td><strong>1. Title</strong></td>
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<tr>
<td>A descriptive and succinct <strong>title</strong> that describes the phenomenon of greatest interest (symptom, diagnostic test, diagnosis, intervention, outcome). Clearly and concisely describe the case topic.</td>
<td>Yes</td>
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<tr>
<td><strong>2. Abstract</strong></td>
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<td>Briefly summarizes the relevant information in 250 words or less without citations. Information should include the following elements: (1) Introduction/Background, (2) Case Description/Key points from the case; and (3) Outcomes/Discussion: Main lessons to be learned from this case report.</td>
<td>Yes</td>
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<tr>
<td><strong>3. Key words</strong></td>
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<tr>
<td>Provides 2 to 5 key words that will identify important topics covered by this case report.</td>
<td>Yes</td>
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<tr>
<td><strong>4. Introduction</strong></td>
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<tr>
<td>The <strong>introduction</strong> should briefly summarize why this case report is important and provide the conceptual foundation for the report. Please provide an adequate background to support the subsequent content. Use American Medical Association (AMA) formatting to cite one of the CARE articles (eg, Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D, et al. The CARE Guidelines: Consensus-based Clinical Case Reporting Guideline Development. <em>Glob Adv Health Med.</em> 2013 Sep;2(5):38-43)</td>
<td>Yes</td>
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<tr>
<td><strong>5. Timeline of Episode of Care</strong></td>
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<tr>
<td>Provides a <strong>timeline</strong> as a chronological summary of an episode of care as a figure or table. This should begin with antecedents and past medical history through the outcome. Should be a graphic representing the case report as a visual summary (see examples of timelines that follow the CARE guidelines).</td>
<td>Yes</td>
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<tr>
<td><strong>6. Case Rationale/ Purpose</strong></td>
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| • The applicant presented a **rationale** for the case, e.g., diagnosis within those seen most often by an oncology practitioner or whose treatment is different than that for a general patient, co-morbidities, presence of “red flags”.  
• The applicant provided insight regarding his/her **perspective of specialist practice**.  
• The case selected is representative of oncologic specialty practice.  
• The specialist provided rationale for the case clearly outlining the indicators that make it reflective of oncologic specialty practice. | Yes | No |
| **7. Narrative of Case** |      |
| • The **presenting concerns** (chief complaints) and **relevant demographic information**.  
• **Clinical findings** describe the relevant past medical history, pertinent co-morbidities, and important physical examination (PE) findings.  
Specialist must describe decision making and rationale for the following:  
• **Examination: Systems Review/Tests & Measures (Diagnostic assessments)** discuss diagnostic testing and results.  
• **Evaluation/Diagnosis** demonstrates the synthesis of all the examination findings from the history, systems review, and tests and measures and applies a differential diagnosis process to establish the diagnosis, prognosis, and plan of care as supported by current practice/literature.  
• **Prognosis/Plan of Care:**  
  o The **prognosis** includes a predicted optimal level of improvement in function and the amount of time needed to reach that level.  
  o The specialist reflects on:  
    ▪ Favorable and unfavorable prognostic indicators  
    ▪ Patient’s perceptions (ie, cognitive/affective status)  
    ▪ Possible contributing factors  
  o The **plan of care** demonstrates the use of interventions to produce changes in the condition that are consistent with the diagnosis/prognosis.  
• **Interventions** describe the types of intervention (pharmacologic, surgical, preventive, lifestyle) and how the interventions were administered (dosage, strength, duration and frequency). Tables or figures may be used.  
• **Follow-up and Outcomes** describes the clinical course of the episode of care during follow-up visits including:  
  o Intervention modification, interruption, or discontinuation  
  o Intervention adherence and how this was assessed  
  o Adverse effects or unanticipated events | Yes | No |
<table>
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<tr>
<th>8. Discussion/Post-Case Reflections</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>Describes case management, including strengths and limitations with scientific references.</td>
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<th>9. Conclusion</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>Offers the most important findings from the case and suggestions for future directions</td>
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<tr>
<th>10. References</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>Appropriately chosen references from peer-reviewed scientific literature. All citations should be &lt;10 years since publication unless the article is considered a seminal study. References are to be provided throughout ALL sections of the case reflection using American Medical Association (AMA) formatting supporting all clinical decision making and intervention techniques. Course manuals are not accepted as supporting references.</td>
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<tr>
<th>11. Acknowledgments</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>(A short acknowledgement section should mention funding support or conflicts of interest, if applicable).</td>
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<th>12. Informed Consent</th>
<th>Yes</th>
<th>No</th>
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<td>(Option 1 provides the opportunity for de-identified information without consent). The patient should provide informed consent and the author should provide this information if requested. Rarely, additional approval may be needed.</td>
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<th>13. Format</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>The case represents specialist practice and is professional in appearance, using correct grammar, spelling and punctuation.</td>
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</table>
12.5 Formatting the Case Report
The following questions can be used to help form your case report. Please also using the scoring rubric to ensure all points are included in your case report. NOTE: the points below are to provide a guide for developing the case report; additional information is likely indicated and should be included.

Introduction/Background:
• What is the foundation for the topic discussed in this case? Condition description, incidence/prevalence, current recommendations for medical management).

Case Rationale/Purpose:
• Is this case representative of oncologic specialty practice?
• Does the specialist provide a rationale for the case that clearly outlines the indicators that make it reflective of oncologic specialty practice?
• Does the specialist provide insight regarding his/her perspective of specialist practice?

Examination:
The history, systems review (risk factor assessment), and tests and measures demonstrate appropriate rationale supported by current practice/literature allowing for measurement of outcomes, diagnostic classification, and/or, as appropriate, a referral to or collaboration with another practitioner(s).

The specialist’s clinical reasoning reflects an organizational approach that considers development of hypotheses in the categories of activity capability/restriction, patient’s perspective on their experience, patho-biological mechanisms, impairments, and source of the symptoms, contributing factors, precautions and contraindications.

Test/Measures:
• How do the physical signs fit with the symptoms? If they do not, how might this influence the prognosis, plan of care and intervention?
• What element of the specialist’s physical examination findings would indicate the need for caution in the intervention?
• What did the specialist consider about referring the client to another health provider?

Evaluation/Diagnosis:
• What is the assessment of the patient’s understanding of his/her problem?
• What is the specialist assessment of the patient’s feelings about his/her problem, its affect on his/her life and how it has been managed to date?
• How did the specialist determine the patient’s goals were appropriate?
• What effect does the specialist anticipate the patient’s understanding and feelings regarding his/her problem may have on the prognosis, plan of care and intervention?
• Have impairments that may require management/reassessment (e.g. posture, movement patterns/motor control, soft tissue/muscle/join/neural mobility sensitivity, etc.) been identified?
• Has supporting and negative evidence from the examination for diagnosis, faulty structure patho-biological mechanism been adequately presented and considered (comment on reliability/validity/specificity/sensitivity/likelihood ratios of test and measures)?
• Would there be a perceived need to refer the client to another health provider?

Prognosis/Plan of Care:
• How do the physical signs fit with the symptoms and if not, how would this influence the prognosis, plan of care, and intervention?
• What about the examination findings would indicate the need for caution in the prognosis, plan of care, and intervention for the patient?
• What is the management of the patient for day one (e.g., advice, exercise, passive mobilization, referral for further investigation, etc.)? Why was this chosen over the other options?
• If passive treatment was used, what are the principle treatment techniques (rationale provided)?
• What physical examination findings (comment on reliability/validity/specificity/sensitivity/likelihood ratios of test and measures) support your choice for management?
• What is the specialist’s expectation of the patient’s response over the next 24 hours?

Intervention:
• How would the specialist progress this patient?
• What kind of outcomes to expect for this patient?
• What would the specialist justify referring the patient to another health provider?
• After subsequent visits, how has the specialist or patient understanding of the patient’s problem and management changed since first session?
• How are the patient’s needs being met?
• What interventions were introduced to improve the overall health status of the patient?
• If the outcome will be less than a 100% resolution of the problem(s), at what point would the specialist cease management and why?

Post-Case Reflections/Discussion:
• On reflection, what clues can be recognized by the specialist that were missed, misinterpreted, under- or over weighted?
• What would the specialist do differently next time?
• Discuss how similar cases were managed based on learning experience from this case?

Conclusion:
• What is the takeaway message from this case?
• Future recommendations?
12.6. Sample Case Report

Relapsed Diffuse B Cell Lymphoma receiving Chimeric Antigen Receptor T - Cell Therapy: A Case Reflection

Abstract:
Chimeric antigen receptor (CAR) T-cell infusion is a new treatment used to treat relapsed, refractory diffuse large B cell lymphoma (DLBCL). There is no literature to support the efficacy of physical therapy interventions while undergoing this treatment. This case reflection examines the examination, evaluation, and treatment of a patient with relapsed, refractory germinal cell DLBCL who was admitted to a large, academic, medical center for a CAR T-cell infusion. She had lymphedema in one leg and edema in the other leg, along with large, inflamed, malignant lesions with drainage and eschar, causing pain and difficulty with physical activity. She also presented with dyspnea upon exertion and impaired balance limiting her functional mobility. Interventions included compression, wound dressings to mitigate symptoms, aerobic conditioning, and dynamic and static balance training. Not only did she have baseline deficits, she was at a high risk for CAR T-cell related encephalopathy syndrome and cytokine release syndrome. Her performance status fluctuated as she developed these mild toxicities, and interventions and goals were tailored to this. With consistent therapeutic intervention, in tandem with medical management, the swelling, inflammation, and discomfort decreased allowing for more comfortable mobility and exercise. Her dyspnea resolved and her functional mobility improved allowing continued independence and a safe discharge to home. This case demonstrates the successful management of a very complex case of a patient receiving a novel treatment for progressive disease. As the body of literature specific to this patient population and treatment modality is developed, the evidence from other oncology populations can be applied to the management of these patients.

Key Words:
CAR T-Cell Therapy, diffuse large B cell lymphoma, physical therapy, exercise.

Chief complaint at time of referral included shortness of breath with deep breathing subsequent to recent surgeries and hospitalizations. No complaints of somatic pain except for occasional 3/10 on a scale of 0-10 during deep breathing.

Introduction [1]:
The medical and surgical management of oncology patients is changing day by day as new treatments are developed to improve survival and quality of life. CAR T-Cell Therapy is a fairly novel treatment for relapsed, refractory DLBCL [2]. There is literature documenting the efficacy of and toxicities due to CAR T-Cell, but nothing related to the role of physical therapy, exercise, or physical activity during or after this treatment. This patient was selected to document a possible approach to managing this unique patient population. The following case reflection demonstrates the advanced clinical thought and knowledge required to manage the patient’s existing and diverse impairments based on the applicable literature, as well as maintain a fluid and ever-changing treatment plan due to potential changes in symptoms or physical functioning during active treatment. All of this needs to be managed while maintaining a knowledge of the patient’s disease process, prognosis, personal goals, and priorities.

Patient History:
The patient was a 65 year old Caucasian woman, diagnosed with germinal cell DLBCL in May 2017 when scans revealed bulky abdominal and pelvic adenopathy with resulting moderate hydronephrosis due to compression on her ureters. She was initially treated with six cycles of R-CHOP (Rituximab, Cyclophosphamide, Doxorubicin Hydrochloride, Vincristine Sulfate, and Prednisone) with an almost complete response. Three months later, she was found to have recurrent DLBCL with a five centimeter abdominal mass, as well as adenopathy in the left iliac chain, left psoas/retroperitoneum, and bilateral inguinal, as well as anterior abdominal wall subcutaneous nodules. During the admission when she was found to have recurrent disease, she developed delirium, respiratory failure requiring intubation, acute kidney injury, and atrial fibrillation leading to a stay in the intensive care unit (ICU). After she recovered from her acute medical complications, she completed two cycles of RICE (rituximab, ifosfamide, carboplatin, and etoposide) and demonstrated complete metabolic response. Planning was initiated for a stem cell transplant, however, during this time, she developed skin nodules which were biopsy proven to be relapsed disease. She was then recommended to undergo CAR T-Cell infusion. Relevant medications upon admission included Norco, Oxycodone, Albuterol, Sertraline, and Silver Sulfadiazine 1% topical cream.

Current Condition/Chief Complaint:
She was admitted to a large academic medical center for conditioning chemotherapy and CAR T-Cell infusion. At this time, she was referred for physical therapy evaluation and treatment, which was standard at the institution providing her care. Along with the above listed history, her past medical history included tobacco use, total abdominal hysterectomy, low back pain and herniated disc, hypertension, hypothyroidism, left lower extremity lymphedema due to lymphoma, and depression. She lived alone with 7 cats, in a single story home with two steps to enter. Her son and daughter in law live close and are involved in her care, but are also caring for the patient’s father. Prior to admission, she reported independence with all mobility and activities of daily living, with the occasional use of a rolling walker. She had received home physical therapy after the above mentioned ICU stay, and verbalized that she understands the necessity of therapeutic intervention during this hospital stay, after she experienced a difficult and prolonged functional recovery one time before. She reported following with an outpatient lymphedema therapist who had instructed her in wrapping with short stretch bandaging. She did report that her daily activities and mobility had become progressively more difficult as her wounds and swelling had gotten worse. Her chief complaint was limited mobility due to swelling and pain from wounds. Her goal was to remain living alone with complete independence from her family.
Review of Systems/Examination:
Examination was performed over the course of two sessions, due to the patient’s limited tolerance for activity. Upon observation, she was independently mobilizing throughout the room and completing her activities of daily living. Baseline vital signs: HR 93 bpm, SpO2 95%, BP 88/52 mmHg. Her strength and range of motion was grossly within functional limits with mild limitations in her lower extremities due to discomfort and swelling. She denied neuropathy during this assessment, although it was documented that she reported altered sensation in her toes just two months prior. She scored 7/12 on the Short Performance Physical Battery (SPPB), and a 23/24 on The Boston University Activity Measure for Post-Acute Care (AM-PAC) Short Form. She ambulated 73 meters during the 6 minute walk test (6MWT), and post vitals were: HR 96, SpO2 96%, BP 96/49. She had dyspnea upon exertion, and reported this test was quite challenging, but also painful. Her gait pattern revealed slow speed, short step length bilaterally, and wide base of support.

Lymphedema (diagnosis per documented past medical history and patient report) was noted in her left leg, and the patient had unsuccessfully attempted to use short stretch bandages to wrap her ankle and foot, reporting that was all she could comfortably reach at this time. She reported that her left leg lymphedema had been well controlled to almost equal the normal size of her right leg, but since admission, both of her legs had become swollen. 2+ pitting edema was noted in her right leg. The swelling extended into her perineal area and lower abdomen. She had multiple large, circular, open and draining lesions on her low abdomen, perineal area, and anterior left leg with eschar noted on the largest wounds. The peri-wound areas were inflamed, red, and tender to the touch with multiple smaller nodules under the skin. At the time of evaluation, the wounds were dressed with the Silver Sulfadiazine 1% topical cream, an occlusive foam dressing, and tape used to adhere this dressing to her skin.

Reflection and rationale for selection of objective measures:
Six Minute Walk Test
The six minute walk test (6MWT) is a self-paced walk test measuring total distance walked in six minutes, used as a submaximal test of aerobic capacity/endurance as well as a performance based measure for functional capacity. There is limited literature describing the psychometrics in a similar patient population, but has been studied in older adults and other cancer diagnoses. In older adults, it demonstrated concurrent validity with the Short Performance Physical Battery (SPPB) and the five time sit to stand test (5xSTS) [3], [4]. In colorectal cancer, it demonstrated moderate concurrent validity with the physical function subscale of the 36 Item Short Form Health Survey [3], [5]. In a mixed sample of cancer patients, it showed good reliability and correlated to exercise capacity and workload [6]. It is easy to administer in the acute care setting, and in this case was used to quantify the patient’s functional mobility and capacity. It was also utilized to monitor improvements or decline in function throughout length of stay.

Short Performance Physical Battery
The SPPB is a collection of assessments to evaluate lower extremity function as it relates to daily activities. It includes walking speed, a balance task, and the 5xSTS. It is very easy to administer in the acute care setting and allows for simple tracking of changes in function, which is important for patients undergoing aggressive treatment for cancer. Again, there is limited documentation of the psychometrics of the SPPB in this particular patient population. In community dwelling older adults, it was shown to have excellent test-retest reliability, adequate internal consistency, and is predictive of all cause morbidity and mobility disability [7], [8], [9]. In community dwelling older adults the minimally detectable change was found to be about 2 [7], minimally clinically important difference is 1 [10], and the cut off score for mobility disability is 10 [9]. In cancer patients, it was shown to be predictive of survival, treatment related complications, and functional decline [11]. In this case, it was utilized to quantify lower extremity function as it relates to daily activities, and tease out specific impairments. It was also utilized with the intent that it would be administered throughout the length of stay to monitor improvements or decline in function.

The Activity Measure for Post-Acute Care (AMPAC) Short Form for Basic Mobility
The AMPAC short form is a quick and easy measure of functional mobility that can be completed by direct observation or clinical judgment. It has good interrater reliability and validity for assessing patients’ activity limitations in acute care [12-14]. It can be utilized across a wide range of diagnoses, can assist with discharge planning, as well as determining the utility for therapy services in the acute care setting [12-14]. This is an outcome measure utilized for all patients in this institution. There is a ceiling effect, however, as obvious with this patient. The AMPAC score showed the patient remained almost completely independent, however, other functional outcome measures demonstrated quite profound deficits.

Reflection on patient examination
At this point, although not exhaustive, my examination revealed the complexity of this patient, the extent and variety of her deficits, and the necessity to prioritize intervention given the practice setting and upcoming treatments. The patient’s immediate complaints and goals were taken into consideration for prioritization. Continuous re-assessments would need to be performed throughout her stay, to reprioritize interventions and goals if necessary. Due to the appearance and state of her wounds, I engaged a certified wound care specialist physical therapist, worked with the wound care nursing team, and encouraged the input of the medical team to understand the potential for healing and/or palliation. A thorough chart review was completed, including review of lab values, possible etiology for edema and worsened lymphedema, and precautions and contraindications to compression therapy [15].

Evaluation/Diagnosis:
The 6 MWT revealed severe limitation in walking distance and endurance, with subjective complaints of pain and discomfort. The Short Performance Physical Battery showed mobility
disability with specific difficulty in the balance portion, but the AMPAC revealed minimal difficulty with the most basic of mobility skills.

The patient presents with dyspnea upon exertion and impaired functional mobility secondary to a multitude of factors including history of aggressive cancer therapy [16], history of a recent, prolonged hospital admission including an ICU stay requiring intubation [17], and most recently, worsening lower extremity edema and wounds which limit her ability to move freely without discomfort. As an added complication to her existing impairments, she was at especially high risk for worsening mobility impairments due to potential side effects of the CAR T-cell infusion that was to be given during her admission. She would require frequent re-assessment of all aspects of function throughout her stay.

The patient had a fair understanding of her disease as well as the etiology of her wounds, but did remain hopeful that the CAR T-cell therapy will “work.” She came in with the experience of rehabilitation after a prolonged ICU stay, so she maintained the understanding of the importance of continued mobilization and therapy intervention throughout her stay and cancer therapy. She was also fiercely independent, as the interactions between her and her son revealed, so she remained motivated to maintain this independence. Her biggest complaint was pain in her legs and wounds with movement and frustration that she was unable to move at her baseline level.

Given all of the above, the focus of treatment was on mitigating the symptoms of her wounds and lymphedema/edema (Practice Pattern 7D) to allow for focus on her aerobic capacity and functional mobility (Practice Pattern 6B). She was also at a high risk for worsening mobility impairments due to potential side effects of CAR T-cell infusions [18]. As described below, her diagnosis and progressive disease maintained a factor in treatment planning throughout her course of care.

Plan of care and intervention:
CAR T-Cell therapy is a relatively new cancer therapy being used to specifically target tumor cells in patients with refractory DLBCL. Despite the progressive nature of the disease at this point, the results of numerous clinical trials report an overall response rate of 50-90%, along with durable remissions [18]. There are certainly variables to the success of any cancer treatment, however, this particular patient was previously functional and independent. Conversely, she has had a long and complicated course of treatment prior to this admission, and had not returned to her pre-morbid level of functioning. It was reasonable to expect, based on the literature, examination and evaluation of the patient, and clinician experience, that despite the possibility for CAR T-cell related toxicities, she would discharge home independently mobilizing and caring for herself, with improved symptom management of her wounds and lymphedema. Discharge recommendations were made for continued outpatient management of her lymphedema. She had a fair understanding of her disease, as well as an understanding of the importance of adhering to treatment plans and exercise given her previous ICU stay and subsequent prolonged recovery.

Short term goals for the acute care setting (length of stay planned for 2-3 weeks) included a safe transition back to her home environment at a functional level high enough to perform her daily activities and mobility independently. We first focused on controlling her lymphedema/edema and pain from wounds, and then progressed to addressing exercise endurance and functional mobility. The following outline was utilized to guide physical therapy intervention.

1. Impairment: Edema/lymphedema
   a. Intervention: Compression, elevation, and exercise along with diuresis prescribed by medical team
   b. Goal: Reduction of edema/lymphedema to the point that it did not limit her ability to exercise

2. Impairment: Painful wounds
   a. Intervention: Continued use of silver sulfadiazine 1% topical cream, a moisture wicking dressing, and no tape. Pain medication prescribed by medical team.
   b. Goal: Reduce inflammation and pain and prevent infection, to facilitate improved ability to exercise and perform functional mobility

3. Impairment: Dyspnea and limited endurance
   a. Intervention: Aerobic capacity and endurance conditioning, breathing techniques
   b. Goal: Return to independent ADL’s and community ambulation with no shortness of breath

4. Impairment: Balance
   a. Intervention: Hip strengthening, task specific training, dynamic activities and multi-tasking during ambulation
   b. Goal: Return to independent ADL’s and community ambulation with normalized gait pattern and speed.

Reflection on intervention selections:
Exercise and compression for lymphedema/edema reduction
There is limited literature regarding treatment for lower extremity lymphedema, especially in this particular diagnosis. Rationale for this treatment approach was based on the breast cancer literature that compression is effective in reducing limb volume [19], [20]. Similarly, the rationale for adding exercise is also based on the breast cancer literature that exercise is an effective and safe addition to other decongestive therapy [21].

Wound care
Given that this patient’s wounds were malignant and would not heal without resolving the underlying cause, the treatment was focused on symptom management and prevention of infection. Although the Silver Sulfadiazine topical was previous prescribed to the patient by a physician
it acts as a broad anti-microbial and could potentially assist with preventing infection [22]. A moisture wicking dressing with no tape was utilized upon the basis that the combination of certain types of wound exudate, with perspiration and repetitive tape use increase the risk for moisture related skin damage in the peri-wound [23].

Aerobic conditioning for dyspnea and reduced endurance
The benefits of aerobic exercise are well documented in mixed cancer populations [24], [25], including the lymphoma population specifically, [26], [27] as well as those with advanced disease [28, 29].

Multimodal approach for balance impairments
Given that this patient’s balance impairment was likely due to a combination of factors including impaired hip strength, impaired muscular endurance, peripheral neuropathy, edema/lymphedema, and cognitive changes due to chemotherapy, the intervention provided was task specific. This included body stability along with dual tasking (cognitive and dynamic upper extremity movement) while ambulating [30].

The first few visits were focused on the management of her edema and wound care, as well as patient education for independent management of compression and wound care. Graded compression was provided via appropriately sized tubigrip, to allow for compliance and ease, based on the practice setting and patient reports of difficulty with short stretch bandaging. The patient became independent and diligent quickly in both wound dressings and compression. This lead to decreased swelling of her legs, and decreased inflammation and discomfort in wounds, so then treatment shifted to aerobic conditioning and balance training. Aerobic conditioning was progressed in the next few sessions by ambulation distance and speed. Balance training was progressed by increasing time spent in body stability positions and increasing the difficulty of dynamic and cognitive tasks during ambulation.

Once the patient received the CAR T-cell infusion, she did develop mild grade 1-2 CAR T-Cell Related Encephalopathy Syndrome and Cytokine Release Syndrome. While the bulk of the therapeutic interventions remained the same, her cognition slowed, her appetite diminished, her tolerance to activity decreased, and her hemodynamics were tenuous. Vital signs were monitored closely. Her tolerance and attention decreased so sessions were kept short. Her response to activity was measured by a numerical 0-10 perception of exertion, and education was provided to guide her and her son (who was staying with her at the hospital) grade her activity in between therapy sessions. The majority of the literature supports the Borg Perceived level of exertion, but in cognitively intact adults and children [31]. This simplified scale was utilized due to the mild cognitive slowing noted in this patient with the development of toxicities. She demonstrated decreased initiation of independent activity and exercise, and was spending more time in bed. Scores on the outcome measures given at evaluation significantly decreased, so the frequency of her physical therapy sessions was increased. Close communication was kept with the medical team to assist with evaluation and management of toxicities. Despite the potential throughout her stay that she may not meet her goals, or her disease would worsen, I provided close follow up knowing that physical therapy goals could be updated or changed based on her response to treatment and goals of care.

Post Case Reflection:
This patient presentation proved to be very complex. She presented with sequela from previous aggressive cancer treatments, along with current impairments due to disease process, and possible impending complications due the planned CAR T-cell infusion. All of this had to be considered when managing her case. Her presentation changed from visit to visit as she reacted to the conditioning chemo and CAR T-cell infusion.

The patient population receiving the CAR T-cell infusion is a heterogeneous group, and each patient presents very differently based on extent of disease, prior treatments, and demographics; just to name a few. There is a small body of literature supporting the positive outcomes of physical therapy and exercise interventions for patients with lymphoma. Due to the novelty of the CAR T-cell infusion, there is minimal literature surrounding the safety or efficacy of physical therapy interventions during this treatment. However, as shown above, the principles of the existing literature can be applied to manage the impairments of each unique patient with an effective multi-modal approach. As CAR T-cell therapy is utilized on a more regular basis at our institution, we are attempting to document patient trends and observations to better guide our interventions, and this patient contributes to that body of knowledge.

There are many lessons that can be extrapolated from this patient to apply to future cases. For this particular patient, I managed her wounds and edema/lymphedema symptoms based on her subjective report and visualization. In hindsight, I would have liked to take measurements of both legs to objectively measure efficacy of intervention. Due to the extensive nature of her wounds, I should have taken pictures to include in my documentation, to better document changes along the course of the intervention. Although the SPPB was a quick and easy measure of this patient’s function, after discussion with my colleagues, it was deemed that since the 6MWT was performed as a measure of function, it would be beneficial to include a more specific measure of balance given the potential for encephalopathy toxicity leading to balance deficits. Due to the limited literature in this specific patient population, I consulted the only EDGE task force document for future patients receiving CAR T-cell therapy.

Although this patient recovered well from the mild toxicities caused by the CAR T-cell infusion, and was able to be discharged home at an independent level with improved
functional mobility and capacity, her wounds began to worsen and multiply just prior to her discharge. Without a biopsy (usually performed at outpatient follow up visit after discharge), there wouldn't be a way to prove her response to the treatment, but this could have been treated as a missed cue to begin to focus on supportive intervention and compensatory techniques to allow her to have a positive quality of life. Unfortunately, she was readmitted not long after discharge, and was subsequently discharged home with hospice after her disease was proven to be refractory to treatment.

The oncology patient population is incredibly complex. The majority of the patients require management of many difference impairments, while maintaining a knowledge of the disease process, contraindications, and precautions. It involves synthesizing the applicable literature, performing a thorough but meaningful examination, creating an effective and sustainable treatment plan, and continuously re-evaluating response to treatment and patient goals. The above case reflection demonstrates this advanced clinical thought, as well as documents the successful management of a patient undergoing a novel treatment for progressive cancer.

References


GLOSSARY

Description of Specialty Practice (DSP). This document is based on a practice analysis, which is a systematic study of professional practice behaviors and content knowledge of specialty practice. The purpose of the practice analysis is to collect data that will describe what specialist practitioners do and what skills and knowledge bases enable them to perform specialty practice. These data are used to describe specialty practice. The DSP defines the content area for the clinical specialist certification examination in the specialty area.

Guide to Physical Therapist Practice. This reference describes physical therapist practice in general, using the disablement model as the basis; describes the various roles of physical therapists and the setting in which they practice; standardizes physical therapy terminology; delineates tests and measures and the interventions that are used in physical therapist practice; and provides preferred practice patterns to assist in (a) improving quality of care, (b) enhancing positive outcomes of physical therapy services, (c) enhancing patient/client satisfaction, (d) promoting appropriate utilization of health care services, (e) increasing efficiency and reducing unwarranted variation in the provision of services, and (f) diminishing economic burden of disablement through prevention and the promotion of health, wellness, and fitness initiatives.

Part 1 of the Guide, “A Description of Patient/Client Management” describes the process of patient/client management including the following 5 elements:

- Examination. A comprehensive screening and specific testing process leading to diagnostic classification or, as appropriate, to referral to another practitioner. The examination has 3 components: the patient/client history, the systems review, and tests and measures.
- Evaluation. A dynamic process in which the physical therapist makes clinical judgment based on data gathered during the examination.
- Diagnosis. Diagnosis is both a process and a label. The diagnostic process includes integrating and evaluating the data that are obtained during the examination to describe the patient/client condition in terms that will guide the prognosis, the plan of care, and intervention strategies. Physical therapists use diagnostic labels that identify the impact of a condition on function at the level of the system (especially the movement system) and at the level of the whole person.
- Prognosis. The determination of the predicted optimal level of improvement in function and the amount of time needed to reach that level.
- Intervention. The purposeful interaction of the physical therapist with the patient/client and, when appropriate, with other individuals involved in patient/client care, using various physical therapy procedures and techniques to produce changes in the condition.
14. RESOURCE GUIDE INFORMATION

Resource guides are compiled by APTA sections and board-certified specialists to reflect current literature in the specialty area. They are provided for your information only. Neither the ABPTS nor the specialty councils has reviewed or endorsed the content of these lists. In addition, reviewing these resources does not guarantee that a candidate will receive a passing score on the specialist certification examination.

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