



## Incorporating Physical Therapist Practice in the Emergency Department: A Toolkit for Practitioners

# Getting Started

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The American Physical Therapy Association “promotes physical therapy as a professional service in the emergency care environment.”<sup>1</sup> Physical therapists who practice as part of an Emergency Department team have the opportunity to collaborate in the care of patients with a wide range of acute and chronic problems coming from the neuromusculoskeletal, cardiovascular pulmonary, and integumentary systems.

Emergency Department PTs play a critical role in screening for appropriateness of care, in consultation with other practitioners, and in the direct care of patients. Other health systems already utilize PTs in this arena, including Europe, Australia, New Zealand,<sup>2,3</sup> and the United States military.<sup>4,5</sup> Increasingly, US hospitals are recognizing the benefits of physical therapy services in the emergency department.

Initiating the development of a PT practice in an ED can be a daunting task. PTs who already work in the ED may encounter obstacles that can be overcome. This Toolkit is designed to help you create or enhance your practice within the ED environment.

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## WHY PRACTICE IN THE EMERGENCY DEPARTMENT?

Physical therapists can provide essential services that improve patient outcomes and enhance Emergency Department (ED) efficiency. A greater number of Emergency Departments welcome the addition of physical therapy services to assist reducing costs, increasing patient satisfaction, and decreasing the potential for readmission through patient education and subsequent PT follow-up.

### Recent Trends in ED Care

**Decreased Emergency Department availability.** Approximately 38% of the EDs are at or over capacity (50% for urban and teaching hospitals), and many hospitals report increased difficulty maintaining on-call physician coverage.<sup>6,7</sup>

**Higher patient load.** It is widely acknowledged that the ED has become a safety net for those with no primary care. For physicians, the pressure to ration their time has taken a backseat to increased patient loads.

The annual number of ED visits rose by 23% between 1997 and 2007,<sup>13</sup> growing at a rate of 3.2% per year, totaling 116.8 million visits in 2007 alone.<sup>8</sup> The latest data from the 2008 National Hospital Ambulatory Medical Care Survey summary showed an even greater number of visits, at 123.8 million.<sup>9</sup> The increased number of patients has led to longer wait times, in which 37% of the patients waited 15-59 minutes and 15.6% waited 1-2 hours.<sup>9</sup>

**Lower readmission rates.** According to one study of acute care PTs, when their discharge recommendations were not implemented, patients were 2.9 times more likely to be readmitted.<sup>10</sup> Although these PTs were not necessarily in the ED, this is one example of PTs' skill in making accurate discharge recommendations that can reduce readmission rates.

**Broadened scope of services.** Improvements in prevention and management of chronic diseases have increased life expectancy.<sup>11</sup> However, for individuals discharged from the ED or who left without ever being seen, every extra hour spent in the ED is associated with increased 7-day mortality and admission to a hospital.<sup>12</sup> To address these issues, non-physician personnel and expanded services—including physical therapists—are being included in the ED more so than in the past.

**Physical therapy**—related ED diagnoses. According to a 2009 CDC survey of emergency departments, many of the leading

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primary diagnoses seen in the ED had the potential for physical therapy triage and/or intervention prior to necessary medical intervention.<sup>13</sup> These diagnoses are consistent with those of patients PTs typically encounter across all clinical settings. Services provided include evaluation and treatment of skin, nerve, bone, muscle, and vascular injuries. This does not include injuries or diseases outside the PT's scope of practice, such as acute systemic or visceral infection, acute cardiac disease (chest

pain), respiratory infection, abdominal pain, pregnancy, or fever of unknown origin diagnoses.

Musculoskeletal injuries are becoming an increasingly common reason for ED visits.<sup>14</sup> In fact, 21% of all visits to the ED are due to chronic pain issues, and current best prescribing practices relieve an average of only 57% of the patient's pain.<sup>15</sup> This is an opportunity for the use of other nonpharmacological options, such as physical therapy.

## PHYSICAL THERAPY DIAGNOSES IN THE EMERGENCY DEPARTMENT

Below are several of the leading primary diagnoses of ED visits<sup>9</sup> that have the potential for PT evaluation and treatment, categorized by possible Preferred Practice Patterns:

	Musculoskeletal	Neuromuscular	Cardiovascular/ Pulmonary	Integumentary
Contusion (with intact skin)	x	x		x
Open wound				x
Spinal disorders	x	x		
Sprains and strains	x	x		
Cellulitis and abscess			x	x
Fractures	x	x		
Sprains and strains, excluding ankle and back	x	x		
Sprains and strains of neck and back	x	x		
Arthropathies and related disorders	x	x		
Rheumatism, excluding back	x			
Cerebrovascular disease/ History of stroke (chronic disease categories)	x	x	x	

For a more detailed statistical breakdown, see Table 12 of the 2009 National Hospital Ambulatory Medical Care Survey summary tables.<sup>9</sup>

# Working Together: Keys to Successful Collaboration

## Collaboration

When deciding to implement new programs, practitioners often focus on requirements such as clinical skills. It is certainly true that Emergency Department (ED) physical therapists must be skilled in assessment, diagnosis, and intervention selection, as well as patient education and discharge planning. However, it is just as essential for PTs to understand the people, the ED culture, the typical workflow, and communication practices.

## WHY IS RELATIONSHIP BUILDING SO IMPORTANT?

Emergency Department culture tends to be very high-pressure and time-sensitive. Emergency medicine physicians diagnose a variety of illnesses and undertake acute interventions to stabilize patients. In order to provide the best care for patients, they rely on teamwork among multiple providers.

Physician practice—and clinical practice in general—has become more specialized, making communication and relationship building between those specialists challenging. Inclusion of physical therapy in the ED challenges traditional relationships and expectations of patients and expands the number of providers who manage a patient's care. Building effective collegial relationships is a critical step in developing PT services in the ED.

PTs in the ED have the potential to further diversify the ED workforce, allowing others to focus their efforts on essential tasks unique to their training.

## COMMON ROLES IN THE EMERGENCY DEPARTMENT AND TYPICAL PROVIDERS

<b>Patient management</b>	Physicians, physician assistants, nurses, nurse practitioners, physical therapists, and respiratory therapists
<b>Case management</b>	Nurses and social workers
<b>Patient relations/advocacy</b>	Social workers, patient advocates, chaplain services, and family members
<b>Supporting roles</b>	Family members, research personnel, housekeeping staff, unit clerks, business managers, and administrators

## INCORPORATING PHYSICAL THERAPY THROUGH COLLEGIAL COOPERATION

The individual who seeks to incorporate PT in the Emergency Department has a responsibility to:

### Identify Shared Values and Expectations

Many health professions have begun to clearly define the specific values they hold dear (eg, American Board of Internal Medicine,<sup>16</sup> APTA<sup>17</sup>). There is considerable overlap in expectations across professions, making creation of comfortable and productive alliances more likely. The following may be particularly important for practicing in the ED:

- Generosity of time and spirit
- Pursuit of excellence
- Hard work and team cooperation
- Compassion/caring
- Integrity

### Understand the Importance of Credentials, Experience, and Skill

In each profession, some skills are built through education, and others require significant practical experience. Just as important as credibility among providers is a PT's credibility with patients. This is demonstrated not only through formal credentials but through:

- Diagnostic accuracy
- Flexibility and tolerance for uncertainty
- Intellectual humility
- Ability to multitask
- Speed of action

### See the Effect of the "Intrusion Factor" (Or, Being a Guest in a New Home)

Incorporating a new element into any organization can be disruptive unless it is embraced by the existing members. Disruption can occur if a PT does not recognize and acknowledge traditional patterns of work and appreciate the natural inclination to resist change. Strategies for navigating the waters include communication that expresses mutual respect, patience in achieving full inclusion, and taking "baby steps" toward the ultimate goal. Acknowledging and rewarding successes may be an effective way to get "traditionalists" and change-resistant colleagues to adopt the inevitable new patterns of behavior required when a new service arrives. The PT should be flexible enough to practice under unfamiliar and new conditions, such as spontaneous scheduling, managing patients who are in a great deal of pain, multitasking, and pitching in when help is needed.



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### Identify Meaningful Outcomes

Emergency Department providers and administrators measure their success in a variety of ways, including:

- Costs of services
- Wait time
- Throughput
- Frequency of patients leaving the ED prior to receiving services
- Patient satisfaction
- 72-hour returns for the same problem

Relationship building will be successful if new providers appreciate the need to help improve ED success measures and preserve the hospital's reputation in the community. Administrators must clearly communicate:

- Expectations for achieving and improving outcomes
- Policies on patient safety
- Methods for improving workflow to enhance patient satisfaction and decrease staff stress
- Information on cost analysis
- How to build referral patterns for further care.

In addition, inclusion of physical therapy as a way to enhance diagnostic accuracy, improve functional outcomes, and increase patient satisfaction from ED care should be presented to colleagues as “value-added” service.

### Emergency Department Culture

It is important to view relationship building in the context of the Emergency Department culture, where people from many different disciplines practice in close quarters in a fast-paced, changeable environment. At times patient emotions may run high, if they feel that their problem is the most critical and become more upset when they see another person being called into the treatment area first. The ED does not operate on a “first come, first served” or scheduled appointment basis; patients are re-prioritized based on acute circumstances, rather than factors such as socio-economic status. As such, collaborating in the ED requires flexibility, the ability to make clinical decisions quickly, and the ability of the staff to change in order to act rapidly.

Over time, more types of health care professionals have moved into the ED, leading to changes in the department's culture and making triage more complex. Many hospital Emergency Departments employ physician assistants and nurse practitioners

who now play key roles, particularly in urgent care. This shift in shared patient responsibilities has opened up opportunities for personnel from other health care professions.

The Emergency Department is often a site for educational experiences for multiple disciplines and is frequently changing in nature due to staff rotation and turnover. This constant flux can provide both a challenge and opportunity to incorporating PT services within the ED. To be the most effective, providers also must respect the ethos of each profession—the values, expectations, and training traditions of its members.

### Physicians

The rise of specialty training in medicine has segmented physicians in both positive and troublesome ways. Emergency Department physicians are expected to respond to an extraordinarily wide array of presenting conditions. Many other physicians, however, are specialized around a body part or system, making their work quite different from that of ED physicians, and a potential source of conflict. Consulting in the ED may be perceived as disruptive to the daily expectations of specialized physicians whose primary responsibilities lie outside the department.

Building relationships with ED physicians and presenting the benefits of PTs as an additional specialty referral source, within the scope of practice, is paramount to the success of an Emergency Department PT practice. Physicians are often viewed as the gatekeepers to incorporating new personnel and procedures within an ED. Therapists must educate and demonstrate how physical therapy services can assist in patient care, support physician services and roles, and complement the physician ethos.

### Nurses

Nurses in the Emergency Department have traditionally been responsible for managing the triage process. Like physicians, ED nurses are expected to be able to recognize and respond to an infinite range of conditions. Apart from triaging patients, their roles typically include stabilization of critical patients, acquiring patient histories, assessing vital signs, administering medication, managing pain, and educating patients to decrease repeat visits. Fostering a positive relationship with nursing staff within the ED can be a mutually beneficial endeavor. Nurses can often provide the PT with valuable patient information prior to and during physical therapy interventions.

Nurses are often significant advocates for physical therapy services in the ED.<sup>32</sup> Physical therapists can encourage this by helping nurses improve patient care, assisting in triaging patients,

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## Collaboration

providing alternative treatments for pain management, and offering patient education. Ensuring communication and fostering teamwork with ED nurses is important to the success of an Emergency Department PT. For example, a pain assessment can be invalidated if a nurse has administered medication for comfort just before treatment.

### Other Non-physicians

In addition to caregivers, non-physicians in the ED may be: research personnel, whose priorities are to recruit subjects and collect data; students, whose priorities are to succeed in learning new skills and whose presence is temporary; housekeeping staff, who are constantly challenged to meet standards for cleanliness; and others whose roles are crucial to the ED.

When a physical therapist joins the team, conflicts in priorities are likely to arise simply because patients may require the services of multiple members of the team. For example, the care process can be disrupted if lab or x-ray services become available during the physical therapy encounter. Careful triage to providers in each essential discipline is required to ensure comprehensive services and continuity within each examination. Understanding and respecting the varied roles of ED personnel is crucial in creating a positive and successful work environment, without which excellent patient care cannot be achieved.

## OTHER INFLUENCES ON COLLABORATION

### Organizational Structure

A typical Emergency Department is broken down into 3 general areas: emergent care, in which critical injury or disease is managed; urgent care, in which less critical conditions are addressed; and observation, in which patients are placed for up to 24 hours to determine if admission is needed. Each of these areas has its own subculture comprising the personnel and their skills, as well as the patients and their presenting conditions. PTs may need to adjust their approach according to the area in which they are consulted. A critical care patient with a high level of acuity, such as stroke with comorbidities, can cause a higher level of stress in an emergent care environment than a similar patient in an observation area whose condition has been stabilized. Understanding these subcultures will enable PTs to determine appropriateness of physical therapy services within each area and how to best provide care to improve patient satisfaction and outcomes.

### Triage Processes

Triage processes are key to patient intake and the patient outflow to further care. Triage typically is managed by nurses who have

been specially trained to sort presenting symptoms and direct patients to the appropriate areas of the ED. Triage nurses face daily the dilemmas of managing the stresses of patients in distress, prioritizing care, and communicating with physicians who are expected to manage non-life-threatening conditions at the same time they are acting to save lives.

Because triage is a 24/7 process, it may be distracting to have some services, such as physical therapy, that are not offered around the clock. Effective triage to physical therapy requires PTs to communicate with other personnel about service availability and educate and provide resources for staff when physical therapy services are not available. For example, PTs should make staff aware of which diagnoses would benefit from PT referrals after discharge and resources on where patients might find physical therapy services. It is important that the PT service itself track the peak times of ED admissions appropriate for physical therapy services and communicate this to ED staff, while providing coverage during these hours. PT coverage needs to be based on data reflecting patient and facility needs to enhance effective triage and patient care.

### Patient Demographics

The demographics of patients who present to each Emergency Department reflect those of the local population, as well as the mission of the institution. Based on these demographics, providers might make assumptions about patients and their practitioners, which could influence prioritizing during triage. For example, a major source of stress may be practitioners' judgment of patients' motivation to present to the ED instead of waiting to visit a physician for a regular check-up.

Insurance reimbursement variations may be a major factor in patient demographics of ED patients. Awareness of a facility's patient demographics can provide valuable insight into the type of physical therapy care that is typical and assist in meeting patient expectations. For example, if the facility has a large volume of geriatric patients because it is located close to a retirement community, the physical therapy service would know that the patients may come to the ED after falling, or may have cognitive issues, sensory deficits (eg, vision, hearing), or financial concerns due to a fixed income, for example.

# Working Together: Keys to Successful Collaboration

## Collaboration

### Hospital Values and Expectations

Hospitals are accountable to various rules and regulations from external sources (eg, Joint Commission, Centers for Medicare and Medicaid Services) and within the US health care system, and also subject to organizational pressures coming from within the hospital structure. This inevitably affects practitioners who are attempting to provide care according to their personal value systems, the ethos of their respective professions, and the value

system of the hospital organization in which the ED lies. Stress may be particularly evident in hospitals in which the ED physicians are employed by academic systems or outsourced companies, because these organizations also have their own values and expectations. Working within and honoring the values and expectations of a facility or provider system is important in maintaining a successful working environment for ED physical therapy services.

# Working Together: Keys to Successful Collaboration

## Collaboration

### CARE PROVIDERS AND CAREGIVERS

Individuals from many disciplines practice within the Emergency Department. Each of these individuals has expectations, job responsibilities, and an inherent culture of their work that drives priorities and work processes. The types of team members vary based on facility type, location, and patient demographics and needs.

- Physicians often share their central role with internists (and perhaps even general practitioners in small communities); specialists in emergency medicine, hospitalists, and consulting; or on-call physician specialists (eg, orthopedics, neurology, and psychiatry).
- Non-physician providers are important to the work process of the ED.
  - Nurses are skilled in triage, managing problem solving, and caring for patients under stress.
  - Nurse practitioners prescribe medication and provide a high level of care for patients with non-critical problems.
  - Physician assistants enable physicians to focus on the more critical presentation of patients.
- Respiratory therapists assess and manage patients presenting with respiratory dysfunction and/or complications such as asthma, bronchitis, and intubation.
- Pharmacists not only dispense medication but assist in allergy screenings, acquire medication history, provide dose recommendations, monitor for medication interactions and adverse reactions, and provide patients with medication discharge instructions.
- Social workers provide patient advocacy, family assistance, and facilitate discharge planning to enhance the quality of patient care and services.
- Students in multiple disciplines can complicate the culture of the ED as they bring novice perspectives and needs to the situation. However, their presence is essential if there are to be future generations of ED practitioners. Consideration must be given as to the appropriate level of learner that can best benefit from experience in the ED. Early clinical students' value in an emergency may be less than students with greater experience, but these may be students trying to decide on their career direction.

Other caregivers also are present in the ED and contribute to the complete patient care model and must be counted as collaborators.

- Family members often are the patient's support system and advocates during the ED stay and primary caregivers following discharge. They can provide ED staff with the patient's medical history, crucial facts relating to the current episode, and information important in determining appropriate discharge plans.
- Chaplains are essential non-medical personnel who can, at times, complicate or facilitate decision making in the ED if a patient's status is critical and family members are not united in a philosophy of life.
- Patient advocates advise and assist patients with insurance questions and concerns regarding treatment options, locate and suggest appropriate services available after discharge, and act as liaisons with family members.
- Research personnel focus on acquiring data instead of providing treatments, but are crucial in the advancement of emergency medicine.
- Housekeeping staff ensure that the ED environment is safe and clean so that it may function effectively.
- Unit clerks, business managers, and administrators are essential to the smooth operation of the ED. However, many of the nonclinical processes may be seen as burdensome by clinicians who would like to avoid the issues of payment and management while they focus on patient care.



# Phases of Engagement

## Engagement

Change can be difficult in any organization, so it is important to plan ahead. When planning and establishing a physical therapy service in the Emergency Department, there are concrete steps PTs can take, in collaboration with existing members of the ED team, to enable a smooth transition, maintain quality patient care, and develop positive relationships with other professionals.

TARGET FOR CHANGE	OPPORTUNITIES FOR PTs	EARLY	LATER	INTENDED EFFECT
Staffing Composition	Review and understand personnel roles and delineations of personnel	x		Awareness and respect for current culture
	Set aside time to shadow MDs, NPs, and PAs	x		Discovery of interface opportunities
	Discuss implications for change	x		Appreciation of stresses about change
	Interview/conduct focus groups of patients	x		Awareness of potential impact on patients
	Propose/implement pilot PT inclusion	x		Awareness of impact on multiple personnel
	Schedule regular staffing of physical therapy		x	<b>Explicit inclusion of physical therapy into the ED culture (eg, hospital policy, health care system requirement, reimbursement expectations)</b>
Triage Processes	Analyze critical cues/sequences of triage	x		Appreciation of stresses of triage
	Create cases simulating options for change	x		Identification of potential triage disruption
	Design/test feasible point of physical therapy entry	x		Refinement of traditional triage process
	Analyze space implications of change	x		Design of new room allocation protocols
	Re-train triage personnel for physical therapy inclusion		x	<b>“PT-first” access for appropriate patients</b>
Professional Expectations	Identify key value systems by discipline	x		Acknowledgement of shared values
	Test congruence of values and outcomes	x		Awareness of shared expectations
	Pilot test(s) of staff outcome satisfaction	x		Identification of implicit/explicit expectations
	Incorporate expectations into ED mission		x	<b>Consensus on critical values (eg, altruism, work ethic, compassion) and outcomes (eg, short waiting times, minimal elopement, few instances of 72-hour return)</b>

# The Role, Function, and Daily Operations of the Emergency Department Physical Therapist

## Role of a PT

When attempting to establish a physical therapy service in an Emergency Department, PTs must address 2 main questions:

1. How will physical therapy benefit this department?
2. What conditions and services are within the PT's scope of practice?

## THE VALUE OF PHYSICAL THERAPY IN THE EMERGENCY DEPARTMENT

The value of PTs in the Emergency Department is supported by national and international research.<sup>19-22</sup> The literature describes many potential benefits of physical therapists in the ED setting, including increased patient satisfaction, decreased cost of unnecessary care, increased treatment and the number of service options, improved patient function and outcomes, and increased productivity and operations within the ED.

### Increasing Patient Satisfaction

Overcrowding is a problem that EDs nationwide face daily. Wait times to receive treatment have increased to a national average of 1 hour,<sup>23</sup> and the time physicians have available for direct patient care has decreased to an average of 36-41 minutes per patient.<sup>24</sup> Of that direct care time, on average only 6-7 minutes are directly involved in hands-on patient care, and the ED physicians are typically caring for 6-7 patients simultaneously.<sup>24</sup> Emergency Department PTs were able to decrease the patient's wait time, provide more contact time, and decrease the total time spent in the ED compared to treatment received from emergency nurse practitioners and physicians. As a result, patients reported higher overall satisfaction in their experience and quality of care, confidence in treatment provided, and understanding of their condition.<sup>19</sup>

### Decreasing the Cost of Unnecessary Care

Physical therapists have been shown to be qualified as musculoskeletal specialists due to their extensive knowledge of musculoskeletal function. Through their unique skill sets with examination and evaluation, PTs decrease the cost of unnecessary tests and services, such as diagnostic imaging, during the diagnostic process.<sup>14,25</sup> Physical therapists' ability to provide alternative pain management treatments, mobility interventions, and expert knowledge on safe discharge options has decreased the costs associated with unnecessary hospital admissions for further consults.<sup>2</sup> Education and interventions provided by PTs in the ED have been proposed to prevent recurrent events and reduced the cost and frequency of readmission for the same condition.<sup>26</sup>

Research<sup>23</sup> has shown there to be a link between prolonged ED stays and occurrence of adverse events for older patients. The 3% increased risk of adverse events results in a hospital admission and twice as long a stay. By shortening ED wait times and length of visits, physical therapy services indirectly lower the risk and cost of longer hospital stays for an older patient population.<sup>23</sup>

### Increasing the Treatment and Service Options Available in the Emergency Department

Incorporating physical therapy services into the Emergency Department provides more treatment options for patients and frees up ED physicians for other consultations. In a pilot study that examined physicians' perceptions of an ED physical therapy service, physicians were quoted as stating that PTs increased the scope of practice available in the ED because they provided a more comprehensive diagnosis and plan of care than normally is available for patients presenting with musculoskeletal conditions. Physicians also perceived that physical therapy services enhanced clinical practice through an expanded scope of management and treatment options for vertigo, wound care, and pain management. Many ED physicians are faced with the challenge of managing patients with chronic pain and found substantial benefits to having other pain control options provided by PTs rather than only being able to prescribe narcotics.<sup>27</sup>

### Improving Patient Function and Outcomes

Although current research has shown vast benefits of early mobilization, traditional ED treatments for soft-tissue injuries include RICE (Rest, Ice, Compress, and Elevate) principles, immobilization (eg, soft cervical collars, braces, etc), and referral for follow-up treatment or consultation. Emergency Department PTs' expertise in the healing phases of acute musculoskeletal injuries and recommended interventions during these phases allows them to initiate proper treatment earlier on and results in improved outcomes of pain and global perceived effect of interventions.<sup>19</sup> Physical therapy intervention typically entails extensive patient education on the condition, recommended treatment, and home management. Having such education available in the ED has been shown to improve patient understanding, satisfaction, adherence to self treatment, and adherence to recommended follow-up treatment after discharge.<sup>20,27</sup> PTs use their knowledge of safety awareness and mobility training when assessing and treating a patient to reduce the risk of falls and improve functional mobility after discharge.<sup>27</sup>

# The Role, Function, and Daily Operations of the Emergency Department Physical Therapist

## Role of a PT

### Improving Productivity and Operations Within the Emergency Department

The additional resource of physical therapy interventions in the Emergency Department improves department productivity by allowing physicians and other staff members to attend to other patients and duties while they manage patients who are within their scopes of practice.<sup>27</sup> Physicians and nurses can spend more time with critical patients. PTs can assist not only with patient care, but also with decisions on hospital admissions, discharge disposition, equipment needs (eg, durable medical equipment), and referrals for outpatient services.<sup>28</sup> The availability of physical therapy consultations is linked to decreased wait times and improved patient throughput, thus helping improve the flow of operations.<sup>27</sup>

### TYPES OF PATIENTS AND CONDITIONS MANAGED BY EMERGENCY DEPARTMENT PTs

#### Patient Characteristics

The majority of patients managed by Emergency Department PTs fall within the Musculoskeletal Practice Pattern.<sup>14,26</sup> In a survey of US-based PTs with ED practice experience, these individuals reported that the majority of musculoskeletal problems were considered to be acute conditions, with a considerable but variable percentage (anywhere from 0% to 75%) considered chronic. The next most commonly reported practice patterns managed by these individuals included neuromuscular conditions, followed by patients categorized within the Integumentary and Cardiopulmonary Practice Patterns, respectively. Some publications have indicated that a significant proportion of patients receiving physical therapy in the ED are older adults.<sup>2,29</sup> Emergency Department PTs may encounter a greater number of patients experiencing high levels of anxiety, pain, and acuity than PTs who practice in more traditional environments.<sup>27</sup>

#### Diagnoses and Conditions Commonly Managed by Emergency Department PTs

Musculoskeletal conditions affecting the lumbar and thoracic spine (39%-43%) are typically the most commonly reported problems managed by PTs, often followed by injuries to the neck or cervical spine (12%-18%), hip and/or knee (11%-17%), shoulder (8%-9%), foot/ankle (7%-9%), and hand, wrist, or elbow (~3%).<sup>14,26</sup> PTs also manage individuals classified as safety or fall risks, or who have conditions associated with fracture, dislocation, and wounds or burns. Worldwide, PTs typically manage patients needing func-

tional or safety assessments.<sup>2,29</sup> Vestibular pathologies are another problem for which ED physical therapists may be consulted.<sup>14,26</sup>

Typical diagnoses eligible for physical therapy triage or physical therapy primary care contact include all musculoskeletal pain, including patients with:

- Back pain
- Shoulder pain/injuries
- Knee pain/injuries
- Ankle pain/injuries
- Cervical pain/injuries
- Vestibular or balance disturbances
- Acute or chronic wound presentation or trophic changes of the skin, including general lower-extremity edema
- Injury from a fall or recent history of falls or other trauma, except those at risk of head or spinal injury
- Signs and symptoms of chronic neurological deficits and subsequent complications, except spinal cord injury patients T6 and above

### SERVICES COMMONLY PROVIDED BY EMERGENCY DEPARTMENT PTs

Though services provided by Emergency Department PTs will likely vary based on individual practice philosophies, expertise, and patient populations, there are some common trends. PTs in ED settings commonly provide diagnoses for patients with musculoskeletal conditions,<sup>14,26,27</sup> patient education,<sup>14,27,30</sup> pain management,<sup>12,14,26</sup> safety and functional assessments,<sup>2,14,21,25,27</sup> and discharge planning.<sup>26,29-31</sup> A sample of surveyed Emergency Department PTs indicated that patient management most often involved patient education, self-management of the patient's condition after discharge, and discharge planning. Procedural interventions directed at pain management, exercise prescription, and assistive device training, though less frequent, were still utilized with a significant proportion of patients. Other services provided to varying degrees included safety assessments, consultation for other ED specialists, manual therapy, splinting, wound care, vestibular interventions, and requests for in-house imaging.

# The Role, Function, and Daily Operations of the Emergency Department Physical Therapist

## Role of a PT

### IMPORTANT CONSIDERATIONS

The below table represents general findings for patient types and services provided, and this information may differ by the type of facility (eg, community ED vs. level 1 trauma center vs. pediatric ED) and location of facility (ie, rural vs. urban). It is important to consider a facility's structure and patient demographics when determining expected ED physical therapy services.

Characteristics of Patients		
<ul style="list-style-type: none"><li>• A significant geriatric population</li><li>• A greater proportion of patients with high levels of anxiety, acuity, and/or pain than may be typical in other settings</li><li>• Patients who lack medical insurance coverage or those with minimal coverage</li><li>• Patients who lack a primary care physician</li><li>• Patients who use the ED as the first point of access for medical care</li></ul>		
Diagnoses and Conditions		
<p>Most common:</p> <ul style="list-style-type: none"><li>• Musculoskeletal conditions (acute and chronic)</li><li>• Conditions affecting the lumbar, thoracic, and cervical spine</li><li>• Injuries of the upper and lower extremities</li><li>• Problems which compromise their safety or classify them as fall risks</li></ul>	<p>Less common:</p> <ul style="list-style-type: none"><li>• Conditions affecting the vestibular system</li><li>• Fractures and dislocations</li><li>• Wounds and burns</li></ul>	
Services Provided by ED Physical Therapists		
<p><b>Consistently Provided Services</b></p> <ul style="list-style-type: none"><li>• Diagnosis</li><li>• Patient education</li><li>• Discharge planning</li></ul>	<p><b>Commonly Provided Services</b></p> <ul style="list-style-type: none"><li>• Pain management</li><li>• Exercise prescription</li><li>• Assistive device training</li><li>• Safety assessment</li></ul>	<p><b>Other Services Provided</b></p> <ul style="list-style-type: none"><li>• Consultation for other ED specialists/professionals: orthopedists, neurologists, occupational therapists, speech-language pathologists, podiatrists, etc</li><li>• Manual therapy</li><li>• Splinting</li><li>• Wound care</li><li>• Vestibular interventions</li><li>• Requests for imaging</li></ul>

# The Role, Function, and Daily Operations of the Emergency Department Physical Therapist

## Role of a PT

### A Typical Schedule for an Emergency Department PT

Hours provided weekly in Emergency Departments across the US will vary based on the needs of the patients, facility, and available staff. Emergency Department physical therapy programs have been described in both full-time and part-time models,<sup>32</sup> with hours ranging from 8:00 am to 4:00 pm, 11:00 am to 7:00 pm,<sup>18</sup> and 8:00 am to 8:00 pm.<sup>33</sup> Providing weekend hours is common<sup>18</sup> and may be necessary to fully accommodate both the higher ED census times and the preferences of referral sources.<sup>27</sup>

Peak hours of service vary widely among programs: One described peak time as between 8:00 am and 4:00 pm,<sup>26</sup> while others reported the busiest time as anywhere from early afternoon to the early evening.<sup>18</sup> The key consideration in determining and scheduling the PT staff hours of operation is an analysis of peak hours of appropriate patient admissions for the specific facility and staffing accordingly.

### An Emergency Department PT's Typical Patient Visit

Physical therapists in 3 specific programs reported spending an average of 30-45 minutes with each patient presenting to the ED who required physical therapy services.<sup>18</sup> Another program estimated an average of 54 minutes of patient encounter time. It is important to note, however that this range can vary considerably based on the individual patient's needs and complexity. Patient contact time will also be influenced by other ED services that the patient may receive during the visit. Other interventions and tests often expand the time required for physical therapy intervention. This may include lab tests, x-rays, other providers, etc. Some balance of the priorities may need to be established so that physical therapy would not always be the last intervention considered. PT time spent with patients does not typically include consultation with physicians/nurses or documentation of the patient encounter.

### Documentation of ED Physical Therapy Services

Documentation of ED physical therapy services is typically completed in accordance with the particular department's policies as well as PT licensure requirements and professional guidelines.<sup>34</sup> Many clinics use electronic health records, discipline-specific templates, or dictation systems for documentation as well. All physical therapy documentation in Emergency Department settings must follow the same guidelines that documentation requires in other settings, including examination, evaluation, diagnosis, prognosis, and plan of care with interventions. Anecdotal reports indicate that ED physical therapy services in existing programs have been documented in both electronic and handwritten formats.



# Emergency Department Physical Therapist Expectations: Skill Set

## Expected Skills

The unique characteristics of the ED environment, workforce, and patient population require a PT to possess certain knowledge, skills, and abilities to be successful. This section provides descriptions of some of the skills important for practicing in the Emergency Department environment.

## PREFERRED EXPERIENCE

- PTs with 1-3 years post graduation clinical experience (minimum)
- Experience within an acute care/emergency care setting
- Experience of consultation and diagnostic processes
- Optional: Completion of a residency program affiliated with an emergency care physical therapy program

## SKILL SET

- **General**
  - Knowledge of general emergency department operations; management of goals and priorities (triage, patient flow and operational flow of department, equipment, monitoring, staffing roles/duties, etc)
  - Expert clinical decision-making skills
  - Acute care knowledge base
- **Non-clinical skills**
  - Proficiency in communication skills, ability to prioritize patients, adapting to patient flow variations, excellent time management skills, ability to multitask, patience in dealing with patients in acute pain, and having flexibility with interventions and daily operations<sup>27</sup>
- **Differential diagnosis**
  - Knowledge and experience in performing differential diagnosis processes with common ED conditions
- **Orthopedic management**
  - Screening, establishing a differential diagnosis and working diagnosis
  - Manual therapy—indications and psychomotor skills, including thrust and non-thrust manipulation for axial and appendicular joints
  - Acute injury management (days 0-2, which is not commonly encountered in traditional outpatient physical therapy settings)
- **Wound care management**
  - Screening, establishing a differential diagnosis and working diagnosis
  - Disposition recommendations (eg, home management vs. admission and/or surgical consult needs)
  - Initiating or modifying a plan of care (eg, cleaning, debridement, dressings)
- **Mobility/fall risk assessment**
  - Evaluation for determining a patient's fall risk<sup>35</sup> and disposition for discharge or admission planning
- **Neurovestibular**
  - Screening (eg, central vs. peripheral vertigo/dizziness), establishing a differential diagnosis and working diagnosis
  - Disposition recommendations (eg, home management vs. admission and/or surgical consult needs)
- **Pain management**
  - Screening, establishing a differential diagnosis and working diagnosis
  - Disposition recommendations (eg, home management vs. admission and/or surgical consult needs)
  - Manual therapy
  - Exercise, instruction in a home program with physical therapy follow-up
  - Electrotherapeutic and/or physical agents and mechanical modalities
- **Radiology**
  - Ability to understand and apply radiological reports and findings
  - Knowledge of red flags and standard treatment protocols for common radiology results
- **Pharmacology**
  - Basic knowledge of medications commonly prescribed and administered in the ED and their potential side effects, adverse reactions, and associated precautions

# Emergency Department Physical Therapist Expectations: Skill Set

## Expected Skills

### SAMPLE PROFESSIONAL DEVELOPMENT/CONTINUING COMPETENCY

*Continuing competence* is the “ongoing possession and application of contemporary knowledge, skills, and abilities commensurate with an individual’s (physical therapist or physical therapist assistant) role within the context of public health, welfare, and safety and defined by a scope of practice and practice setting.”<sup>36</sup> PTs may participate in continuing competency in a variety of ways. They may attend continuing education courses, utilize mentorships, and participate in practice-based learning, self-assessment, individualized learning experiences, etc, to elevate their competency in various domains of practice.

The following is a **sample** of professional development and continuing competency for the ED physical therapist.

#### Level 1 (Basic Skill Set, Entry Level)

- Instruction and on-site mentorship from experienced Emergency Department PT
- Emergency response certification (CPR)

#### Level 2 (Advancing Skill Set)

- One year of general inpatient or outpatient practice
- Required training:
  - Additional training in differential diagnosis
  - Pharmacy training (shadow)
  - Radiology training (shadow)
  - MD instruction/collaboration (shadow)
- Additional training as needed:
  - Wound care experience
  - Vestibular experience
  - Fall risk assessment
- Competency proven through written and practical demonstration of knowledge and skills
- Benefits of training:
  - Ability to order appropriate diagnostic tests, including imaging, vascular tests, electromyography (EMG)
  - Decreased utilization of imaging with no loss in efficacy of differential diagnosis
  - Ability to refer to appropriate services
  - Ability to complete formal evaluation and discharges as needed, with communication to the ED physician

- Authoritative recommendation of appropriate medications, limited to non-narcotic pain relievers, muscle relaxants, and anti-inflammatories (would require MD review and order)

#### Specialized skills

- Residency/fellowship
- Advanced clinical degree(s)
- APTA Specialist Certification
  - CCS (Cardiovascular and Pulmonary Certified Specialist)
  - ECS (Clinical Electrophysiologic Certified Specialist)
  - GCS (Geriatric Certified Specialist)
  - NCS (Neurologic Certified Specialist)
  - OCS (Orthopaedic Certified Specialist)
  - PCS (Pediatric Certified Specialist)
  - SCS (Sports Certified Specialist)
  - WCS (Women’s Health Certified Specialist)
- Other evidence of advanced clinical practice/specialization

### STAFFING

#### Short-term

Because of the current physical therapist shortage and challenges in recruiting emergency care PTs, new programs should balance an experienced PT with a new graduate to cover a program. When trying to build a program, it is important to have an experienced PT initially due to the very high profile of this position. New PTs are generally more willing to accept an ED position, and have recent training in the broad scope of practice, but lack in specific ED experience. An experienced PT (most likely from a background of diverse areas of PT) can mentor a new PT.

#### Long-term

##### *Student clinical internships in emergency care*

Ideally, this would be one of the final clinical internships, and preceded by internships in the following areas:

- Outpatient orthopedics
- Neurology/vestibular\*
- Wound care\*
- Home health\*

\* If possible, combine with exposure to acute care. It would also be preferable to have internships with board-certified specialists to increase exposure to clinically integrated evidence-based practice.

##### *Residency/fellowship in emergency care*

This could be a 1-month to 2-year training period.

# Emergency Department Physical Therapist Expectations: Skill Set

## Expected Skills

### PAYMENT

Payment and billing procedures vary based on facilities' protocols, administrative procedures, and structuring of ED physical therapy services. However, these services are generally billed as outpatient physical therapy charges within currently established ED physical therapy programs.

#### CPT Codes Frequently Used by PTs in the ED<sup>32</sup>

- 97001 Physical therapy evaluation
- 97535 Self care/home management training
- 97116 Gait training
- 97110 Therapeutic exercise
- 97112 Neuromuscular re-education
- 97542 Wheelchair management
- 97597 Active wound care management; debridement <20 cm
- 97598 Active wound care management; each additional 20 sq cm
- 97602 Non-selective debridement
- 97760 Orthotic management and training
- 97761 Prosthetic training
- 97762 Checkout for orthotic/prosthetic use
- 95992 Canalith repositioning procedure(s)
- 29581 Application of multi-layer venous wound compression system, below the knee

### Typical Payer Mix

- Federal
- Private
- Self-pay

Under Medicare rules and regulations, the evaluation and/or treatment of a Medicare beneficiary in observation status or in the Emergency Department is considered outpatient therapy. Therefore, physical therapy services are provided under Part B, outpatient therapy.<sup>37</sup>

# References

## References

1. American Physical Therapy Association. *Physical Therapy in the Emergency Care Environment* (HOD P06-08-18-12 [Position]). [http://www.apta.org/uploadedFiles/APTAorg/About\\_Us/Policies/HOD/Practice/EmergencyCare.pdf](http://www.apta.org/uploadedFiles/APTAorg/About_Us/Policies/HOD/Practice/EmergencyCare.pdf). Accessed November 1, 2011.
2. Anaf S, Sheppard LA. Describing physiotherapy interventions in an emergency department setting: an observational pilot study. *Accid Emerg Nurs*. 2007;15(1):34-39.
3. Kilner E, Sheppard L. The "lone ranger": a descriptive study of physiotherapy practice in Australian emergency departments. *Physiotherapy*. 2010;96(3):248-256.
4. Greathouse DG, Schreck RC, Benson CJ. The United States Army physical therapy experience: evaluation and treatment of patients with neuromusculoskeletal disorders. *J Orthop Sports Phys Ther*. 1994;19(5):261-266.
5. Murphy BP, Greathouse D, Matsui I. Primary care physical therapy practice models. *J Orthop Sports Phys Ther*. 2005;35(11):699-707.
6. Chapter 3: Utilization and volume. In: *Trendwatch Chartbook 2010: Trends Affecting Hospitals and Health Systems*. American Hospital Association Web site. <http://www.aha.org/aha/trendwatch/chartbook/2010/chart3-9.pdf>. Published June 4, 2010. Last updated April 5, 2011. Accessed November 2, 2011.
7. McCaig LF, Nawar EW. National Hospital Ambulatory Medical Care Survey: 2004 emergency department summary. *Adv Data*. June 2006;372:1-29.
8. Tang N, Stein J, Hsia RY, Maselli JH, Gonzales R. Trends and characteristics of us emergency department visits, 1997-2007. *JAMA*. 2010;304(6):664-670.
9. National Center for Health Statistics, Centers for Disease Control and Prevention. National Hospital Ambulatory Medical Care Survey: 2009 emergency department summary tables. [http://www.cdc.gov/nchs/data/ahcd/nhamcs\\_emergency/2009\\_ed\\_web\\_tables.pdf](http://www.cdc.gov/nchs/data/ahcd/nhamcs_emergency/2009_ed_web_tables.pdf). Accessed August 9, 2012.
10. Smith BA, Fields CJ, Fernandez N. Physical therapists make accurate and appropriate discharge recommendations for patients who are acutely ill. *Phys Ther*. 2010 May;90(5):693-703.
11. Xu J, Kochanek KD, Murphy SL, Tejada-Vera B; Division of Vital Statistics. Deaths: final data for 2007. *National Vital Statistics Reports*. [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). Published May 20, 2010. Accessed October 26, 2011.
12. Guttmann A, Schull MJ, Vermeulen MJ, Stukel TA. Association between waiting times and short term mortality and hospital admission after departure from emergency department: population based cohort study from Ontario, Canada. *BMJ*. 2011;342:d2983.
13. Niska R, Bhuiya F, Xu J. National Hospital Ambulatory Medical Care Survey: 2007 emergency department summary. *Natl Health Stat Report*. August 2010;26:1-31.
14. Lebec MT, Jogodka CE. The physical therapist as a musculoskeletal specialist in the emergency department. *J Orthop Sports Phys Ther*. 2009;39(3):221-229.
15. Dillard JN, Knapp S. Complementary and alternative pain therapy in the emergency department. *Emerg Med Clin North Am*. 2005;23(2):529-549.
16. ABIM Foundation, ACP-ASIM Foundation, and European Federation of Internal Medicine. Medical professionalism in the new millennium: a physician charter. *Ann Intern Med*. 2002;136(3):243-246.
17. American Physical Therapy Association. *Professionalism in Physical Therapy: Core Values* (BOD P05-04-02-03 [Amended BOD 08-03-04-10]). [http://www.apta.org/uploadedFiles/APTAorg/About\\_Us/Policies/BOD/Judicial/ProfessionalismPT.pdf](http://www.apta.org/uploadedFiles/APTAorg/About_Us/Policies/BOD/Judicial/ProfessionalismPT.pdf). Accessed October 26, 2011.
18. McClellan CM, Greenwood R, Bengert JR. Effect of an extended scope physiotherapy service on patient satisfaction and the outcome of soft tissue injuries in an adult emergency department. *Emerg Med J*. 2006;23(5):384-387.
19. Lau PM, Chow DH, Pope MH. Early physiotherapy intervention in an accident and emergency department reduces pain and improves satisfaction for patients with acute low back pain: a randomised trial. *Aust J Physiother*. 2008;54(4):243-249.

# References

## References

20. Morris CD, Hawes SJ. The value of accident and emergency based physiotherapy services. *J Accid Emerg Med.* 1996;13(2):111-113.
21. Anaf S, Sheppard LA. Lost in translation? How patients perceive the extended scope of physiotherapy in the emergency department. *Physiotherapy.* 2010;96(2):160-168.
22. Ackroyd-Stolarz S, Read Guernsey J, Mackinnon NJ, Kovacs G. The association between a prolonged stay in the emergency department and adverse events in older patients admitted to hospital: a retrospective cohort study. *Qual Saf Health Care.* 2011;20(7):564-569.
23. Chisholm CD, Weaver CS, Whenmouth L, Giles B. A task analysis of emergency physician activities in academic and community settings. *Ann Emerg Med.* 2011;58(2):117-122.
24. Springer BA, Arciero RA, Tenuta JJ, Taylor DC. A prospective study of modified Ottawa ankle rules in a military population. Interobserver agreement between physical therapists and orthopaedic surgeons. *Am J Sports Med.* 2000;28(6):864-868.
25. Fleming-McDonnell D, Czuppon S, Deusinger SS, Deusinger RH. Physical therapy in the emergency department: development of a novel practice venue. *Phys Ther.* 2010;90(3):420-426.
26. Lebec MT, Cernohous S, Tenbarger L, Gest C, Severson K, Howard S. Emergency department physical therapist service: a pilot study examining physician perceptions. *Internet J Allied Health Sci Pract.* 2010;8(1):1-12. <http://ijahsp.nova.edu/articles/Vol8Num1/pdf/Lebec%20Final.pdf>. Accessed November 2, 2011.
27. Tompkins J, Verheijde J. Utilization of physical therapy in an emergency setting: a pilot review. Presented at: Mayo Clinic; March 2010; Phoenix, AZ.
28. Kilner E. What evidence is there that a physiotherapy service in the emergency department improves health outcomes? A systematic review. *J Health Serv Res Policy.* 2011;16(1):51-58.
29. Ball ST, Walton K, Hawes S. Do emergency department physiotherapy practitioners, emergency nurse practitioners and doctors investigate, treat and refer patients with closed musculoskeletal injuries differently? *Emerg Med J.* 2007;24(3):185-188.
30. Jibuike OO, Paul-Taylor G, Maulvi S, Richmond P, Fairclough J. Management of soft tissue knee injuries in an accident and emergency department: the effect of the introduction of a physiotherapy practitioner. *Emerg Med J.* 2003;20(1):37-39.
31. Woods E. The emergency department: a new opportunity for physical therapy. *PT Magazine.* 2000;8(9):42-47.
32. Lebec MT, Kesteloot L. Physical therapist consultation in the emergency department for patients with musculoskeletal disorders: a descriptive comparison of programs in the American southwest. Presented at: International Conference of Orthopaedic Nursing; September 16-17, 2010; Dublin, Ireland.
33. Jogodka CE, Coleman SR. Physical therapy in the emergency department: the evolution of practice after 15,000 patient visits. Poster presented at: Annual Conference of the American Physical Therapy Association; June 21-24, 2006; Orlando, FL.
34. American Physical Therapy Association. *Guidelines: Physical Therapy Documentation of Patient/Client Management* (BOD G03-05-16-41 [Amended BOD 02-02-16-20; BOD 11-01-06-10; BOD 03-01-16-51; BOD 03-00-22-54; BOD 03-99-14-41; BOD 11-98-19-69; BOD 03-97-27-69; BOD 03-95-23-61; BOD 11-94-33-107; BOD 06-93-09-13; Initial BOD 03-93-21-55] [Guideline]). [http://www.apta.org/uploadedFiles/APTAorg/About\\_Us/Policies/BOD/Practice/DocumentationPatientClientMgmt.pdf](http://www.apta.org/uploadedFiles/APTAorg/About_Us/Policies/BOD/Practice/DocumentationPatientClientMgmt.pdf). Accessed October 26, 2011.
35. Balance and falls Web page. American Physical Therapy Association Web site. <http://www.apta.org/BalanceFalls/> Accessed October 27, 2011.
36. American Physical Therapy Association. *Professional Development, Lifelong Learning, and Continued Competence in Physical Therapy* (HOD P05-07-14-14 [Position]). [http://www.apta.org/uploadedFiles/APTAorg/About\\_Us/Policies/HOD/Professional\\_Development/ProfessionalDev.pdf](http://www.apta.org/uploadedFiles/APTAorg/About_Us/Policies/HOD/Professional_Development/ProfessionalDev.pdf). Accessed October 27, 2011.
37. Centers for Medicare and Medicaid Services. Chapter 15. *Medicare Benefit Policy Manual*. <http://www.cms.gov/manuals/Downloads/bp102c15.pdf>. Updated July 8, 2011.



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Physical therapists can assist the Emergency Department team with consultation before a diagnosis is established, from preliminary screening to detailed work-up. As an ED physical therapist, you have access to triage forms, emergency physician and nursing reports, as well as imaging, laboratory test results, and past medical records, among others.

The following patient cases represent unique situations that are not unusual to the Emergency Department and illustrate the use of differential diagnosis and systematic problem solving.

## CASE 1

### Symptoms

- A 31-year-old man complains of right distal quad/lateral knee pain that began 1 month ago, while running
- Reports popping sensation in right leg with immediate pain that stopped him from running
- Patient was able to walk and rested for several weeks with decreased pain
- Ran 1 week prior to coming to the ED. Felt increased right lateral hip/distal quad pain that has continued to increase to the point where he is unable to walk. Pain primarily when bearing weight.
- Has been running since he was a teenager, averaging 80-100 miles per week

### Past Medical History

- Eye surgery only

### Social History

- Lives in single-level home with 1-2 steps to enter
- Employed as a manager for local pizzeria

### Examination Findings

#### Vitals:

- All within normal limits

#### Neurologic:

- Sensation intact
- Good pedal pulses
- 2+ patellar and Achilles deep tendon reflexes bilaterally

#### Knee Screen:

- Negative laxity or pain with ligament testing

#### Hip:

- Marked limitation of internal rotation (IR)
- Positive FABER test (Flexion, ABduction, and External Rotation of the hip)
- Positive FADIR test (Flexion, ADduction, and Internal Rotation of the hip)

#### Spine:

- Unremarkable

#### Palpation:

- Painful at right anterior superior iliac spine; proximal hip flexor attachment
- Painful over lateral quads and distal iliotibial band

#### Labs/Imaging:



### Diagnosis

- Avascular necrosis of the right hip

### ED Management

- Gait training; toe-touch weight bearing on right side, using crutches and compression wrap on right thigh for pain relief
- Instruction in pain-free range-of-motion exercises

### Follow-up

- Orthopedic consult in ED for possible total hip arthroplasty

### CASE 2

#### Symptoms

- A 47-year-old man has been experiencing severe low back pain for the past month
- Called EMS because he was unable to get up from the couch

#### Past Medical History

- Although there was no specific injury or trauma, he does have a history of minor recurrent low back pain
- Was seen in the Emergency Department 2 weeks prior for the same complaint, diagnosed with lumbar strain, and treated with narcotics and NSAIDs
- Denies bowel and bladder dysfunction
- Hypertension, otherwise denies significant history

#### Social History

- Smokes tobacco and uses alcohol; no illicit drugs
- Currently employed as a day laborer, but has been unable to work for the last week due to low back pain

#### Examination Findings

##### General:

- Appears uncomfortable
- Lies supine
- Guarded movement

##### Vitals:

- Temperature = 99.1°
- Blood pressure = 153/92

Respiratory rate and oxygen saturation (SaO<sub>2</sub>) are within normal limits

##### Neurologic:

- +SLR (straight leg raising) bilaterally, light touch=bilaterally

##### Strength:

- 5/5 bilaterally distal lower extremities in supine position

##### Range of Motion:

- Supine hip passive ROM limited to 90°
- External rotation > internal rotation, -30° combined, each with empty end feel
- Unable to tolerate standing exam
- Functional ROM similar

##### Palpation:

- Skin dry, but warm to the touch
- Prone posterior/anterior joint mobilization to L4/L5 region exquisite, tender

#### Further Questioning

- Discloses to PT that he has been sober for less than 1 year and has a history of cocaine use
- Sheet-soaking sweats, night pain
- Has recently been incarcerated

#### Diagnosis

- L4/L5 discitis

#### ED Management

- Admitted to Neurosurgery
- IV antibiotics
- Pain control
- Surgery for debridement and decompression within 24 hours



### CASE 3

#### Symptoms

- A 52-year-old woman presents with a stiff, painful neck with insidious onset 3 months previous
- Ongoing neck pain, slight headache

#### Past Medical History

- According to ED chart review, the patient has been seen multiple times
- Multiple providers (DC, DO, LAc, PT, MT\*) have not relieved the pain
- Referred to outpatient physical therapy previously, and has an outpatient evaluation scheduled in 3 days
- Patient denies injury, surgery, rheumatoid arthritis, cancer, constitution symptoms

#### Social History

- Works on laptop at kitchen table
- Has had stress due to work and recent divorce

#### Examination Findings

##### General:

- Uncomfortable, guarded (rotates from thoracic spine and shoulders)
- Appears slightly nervous
- Eager to interact with PT

##### Vitals:

- Temperature, blood pressure, respiratory rate, and oxygen saturation (SaO<sub>2</sub>) are all within normal limits

##### Neurologic:

- Sensation decreased, light touch on right = C4-C6
- Deep tendon reflexes for both upper extremities and lower extremities are brisk, with positive ankle clonus
- Self-reported balance-impairment
- Toes down-going bilaterally, positive Hoffman's sign present on right
- Unable to obtain Seated Sharp-Purser or transverse ligament stress test results due to extensive muscular guarding

##### Range of Motion:

- Cervical spine, < 20° total
- Upper-extremity ROM is grossly within full limits bilaterally

##### Strength:

- Upper-extremity strength grossly equal in wrist and hand only

##### Manual:

- Supine position
- Relaxation, gentle posterior/anterior pressure at the occipito-atlantal (OA) joint with relief
- Able to relax and rotate head, resulting in increased concern for upper cervical instability

##### Assessment

- Attempted flexion/extension radiograph to examine for cervical instability
- Radiology calls ED, advises computerized axial tomography (CT) scan after completing 1 view of the cervical spine

##### Diagnosis

- C1-C2 dislocation
- Severe osteomyelitis of the dens axis
- Spinal abscess

##### ED and ICU Management

- Immediate hard collar
- Neurosurgery halo reduction
- IV antibiotics
- Pain control
- Surgical debridement, decompression, fusion

\*DC = Doctor of Chiropractic; DO = Doctor of Osteopathy;  
LAc = licensed acupuncturist; PT = physical therapist;  
MT = manual therapist.

