



# Physical Therapy, Occupational Therapy, and Speech Language Pathology in the Emergency Department

## Specialty Consult Services to Enhance the Care of Older Adults

Elizabeth A. Pontius, DPT\*, Robert S. Anderson Jr, MD

### KEYWORDS

- Emergency department • Physical therapy • Occupational therapy
- Speech-language pathology • Geriatrics

### KEY POINTS

- Physical therapy (PT), occupational therapy (OT), and speech-language pathology (SLP) can assist in determining a safe discharge plan for older adults with complex disposition problems.
- PT in the emergency department (ED) has been shown to decrease length of stay, admissions, opioid administration, and unnecessary imaging and to increase patient satisfaction.
- SLP in the ED can identify dysphagia in at-risk patients such as those with stroke, aspiration pneumonia, and frailty.

### INTRODUCTION

Although Rehabilitation Medicine has long been a pivotal part of inpatient care, it has been slow to take hold in the emergency department (ED) setting. As recently as 2010, Physical Therapy (PT) in the ED was being described as a novel practice.<sup>1</sup> In 2018, Occupational Therapy (OT) in the ED was described as a “nascent field” that is “only beginning.”<sup>2</sup> There is a paucity of literature describing Speech Language Pathology (SLP) services in the ED. Given the high volume of older adults in the ED with complex disposition problems, the roles of PT/OT/SLP can be of particular value. Their input regarding whether the patient can be safely discharged home or

---

Maine Medical Center, 22 Bramhall Street, Portland, ME 04102, USA

\* Corresponding author.

E-mail address: [PONTIL@mmc.org](mailto:PONTIL@mmc.org)

Emerg Med Clin N Am 39 (2021) 419–427

<https://doi.org/10.1016/j.emc.2021.01.005>

0733-8627/21/© 2021 Elsevier Inc. All rights reserved.

[emed.theclinics.com](http://emed.theclinics.com)

needs admission to the hospital is relatively well understood. However, rehabilitation medicine expertise also includes the diagnosis and treatment of gait and balance disorders, musculoskeletal injuries, impaired cognition, and dysphagia. It has been observed that elders sustaining injury from a fall rarely have formal fall risk assessment in the ED. Miller and colleagues<sup>3</sup> found that in older adults presenting with a fall and subsequently discharged home, gait was assessed only 10.2% of the time, balance 4.1%, lower extremity range of motion 4.9%, lower extremity strength 2.0%, cognition 26.1%, vision 2.0%, and ability to perform activities of daily living 7.3%.

Excluding these elements in the evaluation of older adults in the ED is a missed opportunity to prevent additional injuries, decrease ED recidivism, and improve safety and patient/family satisfaction. Consider, for example, the traditional model where one might splint the wrist after a fall, do a “road test,” and discharge the patient. Compare with an integrated model where one might also learn that the patient needs additional outpatient help with PT or medication management for a safe discharge from the ED.

## BACKGROUND

Integration of PT in the ED setting was described in the literature as far back as the 1990s in the United Kingdom (UK).<sup>4</sup> In the time since then, the international model for PT in the ED has evolved in countries such as Australia, Canada, and the UK where physical therapists (PTs) are fully integrated and work as primary providers, caring for lower acuity patients with musculoskeletal complaints presenting to the ED. In these countries, at some locations, PTs assess and treat patients independently and are able to order and interpret imaging as well as prescribe certain medications.<sup>5,6</sup> Studies have shown that for patients with musculoskeletal disorders, there is often agreement between ED physicians and PTs with respect to care plans.<sup>7</sup> In addition, when patients are seen by PT in the ED, there is an associated reduced length of stay and wait times.<sup>8–10</sup>

PT/OT/SLP services in the United States (US) are still considered novel, and the model of care varies significantly from the international model. In the US, rehabilitation services are secondary consult services, relying on a physician’s referral to initiate care. The role of PT in the ED in the US was first described around 2000.<sup>10</sup> The body of literature has grown since that time, examining perceptions, length of stay, readmissions, patient satisfaction, rates of imaging, opioid use, and cost. For example, in 2011 the American Physical Therapy Association (APTA) published “Incorporating Physical Therapy in the Emergency Department: A Toolkit for Practitioners.” The APTA “promotes physical therapy as a professional service in the emergency care environment” and at the same time recognized that developing a PT program in the ED is a daunting task. The toolkit provides a roadmap for building a program, but unfortunately, the utilization of PT services in the ED remains limited.

Research on OT in the ED is in its infancy.<sup>2,11</sup> To date, studies have examined OT’s perspectives on working in the ED, hospital admission rates, and readmission rates. International studies have shown that patient admissions to the hospital are reduced with the use of OT services.<sup>12–14</sup>

Speech-language pathologists (SLPs) are specialists in dysphagia, and their evaluations can be valuable in determining a safe disposition plan for older adults where oropharyngeal dysphagia is a major concern. Functional oropharyngeal dysphagia affects up to 84% of patients with Alzheimer’s disease and more than 50% of elderly institutionalized patients.<sup>15,16</sup> Oropharyngeal dysphagia and aspiration are also

prevalent findings in elderly patients with pneumonia, and an SLP assessment should be considered.<sup>17</sup>

### ROLE OF PHYSICAL THERAPY

PT practice in the ED has been developed around the world, and the body of literature continues to grow supporting the value of this service. Studies have shown that PT intervention in the ED can lead to decreased wait and treatment times, decreased admission rates, increased patient satisfaction, decreased opioid administration, decreased cost of unnecessary tests and services such as diagnostic imaging, and improved patient function and outcomes.<sup>8,9,14,18–20</sup> A qualitative study by Lebec and colleagues shows that many ED physicians recognize the benefits of PTs in the evaluation of ED patients. Specifically, PTs are seen as having more functional clinical knowledge of musculoskeletal injuries than ED physicians, as reported by the physicians. In addition, ED physicians feel PTs complete clinical tasks that would have otherwise been delegated to patient care technicians, nurses, or other providers; this is seen as time saving and helps with department throughput.<sup>10,21,22</sup>

In the ED setting, PTs commonly manage conditions that affect the lumbar and thoracic spine (39%–43%) and injuries of 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>23</sup> In addition, PTs are trained in lower extremity and spine bracing as well as neurovestibular assessment and treatment and should be considered as a specialty referral service in these areas as well (**Table 1**).

PTs have the potential to offer considerable improvements in care to older adults who present to the ED after a fall, a common presenting complaint. In one study, nearly 90% of older adults discharged home after a fall did not have a formal gait assessment with more than 95% not having a formal balance assessment.<sup>3</sup> Identifying impairments in gait mechanics such as a foot drop, or impairments in balance such as difficulty in reaching outside the base of support, can guide the therapist in prescribing bracing or assistive devices to decrease the risk of future falls. In one study, targeted referrals to existing community services in isolation did not seem to be effective in preventing the recurrence of falls in a 12-month period.<sup>24</sup> PT services can play an integral role in filling this gap, as it has been shown that patient education provided by a PT in the areas of safety awareness and mobility training is effective in reducing falls for at-risk patients presenting to the ED.<sup>21</sup> A geriatric population presenting to the ED can be better served by PT through emphasis on injury prevention, fall risk assessment, gait training, use of assistive devices, and mobility assessment.<sup>1,18</sup>

### ROLE OF OCCUPATIONAL THERAPY

OTs focus on assessing functional ability and cognition and their impact on activities of daily living.<sup>25</sup> Given that only 7.3% of older adults presenting to the ED are assessed for their ability to perform ADLs and 26.1% have their cognition assessed, there is considerable opportunity for OT involvement in the ED. OT referrals in the ED have been shown to be as low as 5.3%.<sup>3</sup> Early studies have shown that OT intervention alone, and as part of a multidisciplinary team, results in a reduced rate of hospital admission.<sup>12–14,26</sup>

OTs recommend interventions and adaptations to address functional and cognitive impairments related to patient education, equipment prescription, and referrals to community resources.<sup>25</sup> It has been demonstrated that even though an older adult may meet the medical criteria for discharge from the ED, a lack of functional capacity

<b>Table 1</b> <b>Rehabilitation areas of service</b>		
<b>Physical Therapy (PT)</b>	<b>Occupational Therapy (OT)</b>	<b>Speech-Language Pathology (SLP)</b>
Safety assessment focused on mobility <ul style="list-style-type: none"> <li>• Discharge recommendation</li> <li>• Falls/fall risk</li> </ul>	Safety assessment focused on cognition and activities of daily living <ul style="list-style-type: none"> <li>• Discharge recommendation</li> <li>• Falls/fall risk</li> <li>• Visual perceptual</li> </ul>	Dysphagia/Swallowing <ul style="list-style-type: none"> <li>• Acute aspiration risk/pneumonia</li> <li>• Acute stroke</li> </ul>
Acute musculoskeletal injuries <ul style="list-style-type: none"> <li>• Hip</li> <li>• Knee</li> <li>• Ankle</li> <li>• Shoulder</li> <li>• Neck</li> <li>• Back</li> </ul>	Cognition <ul style="list-style-type: none"> <li>• Acute cognitive changes</li> <li>• Formal cognitive assessments</li> </ul>	Speech/Language <ul style="list-style-type: none"> <li>• Acute changes in speech or language</li> </ul>
Gait training <ul style="list-style-type: none"> <li>• Assess need for a device</li> <li>• Training with new device and/or weight-bearing restriction</li> </ul>	Splinting and bracing <ul style="list-style-type: none"> <li>• Wrist and hand splints/braces</li> <li>• Spine bracing</li> <li>• Slings</li> </ul>	Cognition <ul style="list-style-type: none"> <li>• Acute changes impacting linguistics/communication</li> </ul>
Bracing and splinting <ul style="list-style-type: none"> <li>• Fracture walking boots</li> <li>• Off-loading shoes</li> <li>• Spine bracing</li> </ul>		
Peripheral vertigo assessment and treatment <ul style="list-style-type: none"> <li>• Canalith repositioning maneuvers for benign paroxysmal positional vertigo</li> </ul>		

or social supports may make it difficult for them to return to their prior circumstances, resulting in prolonged length of stays and increased risk of ED recidivism.<sup>27</sup> The expertise of an OT can be valuable in determining whether the elderly patient is safe for discharge to home by considering functional status and life situations beyond the immediate medical concern.<sup>11</sup>

Occupational therapists perform independent, in-depth histories that focus on the patient's home environment, prior level of function, and available support. Examinations include upper extremity range of motion, strength, coordination, cognition, functional mobility, and balance. This assessment is then conceptualized with activities of daily living (ADLs) and instrumental activities of daily living (IADLs). Examples of ADLs and IADLs are included in [Table 2](#). In addition to evaluating function status, OTs are also trained in upper extremity splinting and the use of adaptive equipment to promote independence (see [Table 1](#)).

## ROLE OF THE SPEECH-LANGUAGE PATHOLOGIST

SLPs can complete an in-depth history and an assessment of a patient's cognition, hearing, communication, oral motor function, and each of the phases of swallowing. SLP is well established in the inpatient care setting and the value of their integration

**Table 2**  
**Examples of activities of daily living and instrumental activities of daily living**

Activities of Daily Living (ADL)	Instrumental Activities of Daily Living (IADL)
<ul style="list-style-type: none"> <li>• Eating</li> <li>• Toileting</li> <li>• Bathing</li> <li>• Dressing</li> <li>• Grooming</li> <li>• Oral hygiene</li> </ul>	<ul style="list-style-type: none"> <li>• Medication management</li> <li>• Meal preparation</li> <li>• Cleaning and maintaining the house</li> <li>• Laundry</li> <li>• Grocery shopping</li> <li>• Safety procedures and emergency responses</li> </ul>

in the ED is growing.<sup>28</sup> Their screening can facilitate referrals for appropriate follow-up in a timely and cost-effective manner.<sup>28</sup>

SLPs are experts at screening individuals for possible swallowing disorders and the differential diagnosis of these disorders. Recognizing dysphagia and recommending follow-up can be useful in preventing aspiration and the associated complications. It has been shown that oropharyngeal dysphagia affects up to 84% of patients with Alzheimer's, 50% of elderly patients living in nursing homes, and 40% of older adults living alone<sup>17</sup> and that dysphagia is a "strong risk factor for pulmonary aspiration, pneumonia and aspiration pneumonitis."<sup>29</sup> This can be an important consideration for ED physicians assessing and treating elders, and an SLP referral may be appropriate if dysphagia is suspected in order to mitigate the risk of aspiration until follow-up after discharge from the ED can occur.<sup>29</sup>

SLPs can identify patients with dysphagia and make specific recommendations with a focus on patient education. Recommendations can include diet consistency, positioning during eating, and follow-up services such as outpatient SLP or specialist consult. In part, SLP areas of service delivery that can be useful to ED physicians are feeding and swallowing to include the oral phase, pharyngeal phase, and esophageal phase and cognition related to attention, memory, problem solving, and executive functioning.<sup>28</sup> SLP areas of service delivery are typically focused on swallowing to assess aspiration risk. In determining whether to consult SLP services, special consideration should be made for elders with neurologic, cognitive, and respiratory impairments (see [Table 1](#)).

## INCORPORATING REHABILITATION MEDICINE INTO THE EMERGENCY DEPARTMENT

It is remarkable that Rehabilitation Medicine is not prominent in the ED compared with inpatient medicine. Imagine asking inpatient physicians or advanced practice providers to perform their own gait and balance evaluations with specific recommendations for the next level of care. Imagine asking them to evaluate ADLs and IADLs. Imagine asking them to become experts in bracing and assistive devices. Imagine asking them to evaluate the phases of swallowing. Yet, every day, physicians or advanced practice providers in the ED are expected to make these critical evaluations based on gestalt or a "road test" without adequate training or expertise. These decisions matter and are linked to satisfaction, safety, and cost.

The authors' own experience incorporating Rehabilitation Medicine in the ED has been an overwhelming success. Initial concerns regarding increasing length of stay were unfounded and mirrored findings that PT/OT/SLP in the ED actually decreased wait times, decreased ED length of stay, and improved workflow.<sup>1,20,30</sup> Barriers to successful implementation also include administration buy in, financial support, physical space limitations, and staffing availability. Rehabilitation administrators should

consider alternative staffing patterns to allow for later hours of coverage and expanded availability.

In addition, it is important to appreciate the unique ED environment. For those rehabilitation specialists who can function in the uncertainty of the ED and work in parallel with other providers, it can be a wonderful fit. It is past due that older patients seeking care in the ED are afforded the same expertise as those upstairs.

### **CASE STUDIES: APPLYING REHABILITATION MEDICINE SERVICES IN EMERGENCY DEPARTMENT**

Case 1: Mrs A. presents to the ED after her first fall at home. Her daughter is worried about her living independently and wants her admitted for placement. The trauma workup is negative. The ED provider, because this is a new fall, does a medical workup, which is also negative. PT and OT are consulted for mobility and cognition evaluation and conclude that she is safe for discharge home with outpatient physical therapy. Care management arranges home PT and social work services. The patient and the daughter are reassured and leave the ED satisfied.

Case 2: Mrs B presents to the ED after yet another fall. This is her third visit in 6 months for a fall. On each prior occasion, her trauma and medical workup was negative, and she was discharged home. During this visit, PT/OT/SLP evaluate her and document that she has mobility, functional, and cognitive issues that preclude safe discharge home. The patient is admitted. Importantly, rehabilitation evaluation in the ED lays the foundation for both continued inpatient care and discharge planning.

Case 3: Mrs C presents as a transfer related to cervical spine fracture after a fall. She has been in a rigid field cervical collar for 6 hours. There is a bed shortage, and she will likely be in the ED for at least a few hours. OT is consulted in the ED and places her in the appropriately padded and ventilated long-term collar preventing further pain and skin breakdown. OTs may be trained in the proper evaluation, sizing, and placement of collars.

Case 4: Mr D presents to the ED from home after burning his hand on the stove. Medically, he is "clear" for discharge. However, the nurse feels that he is a little "off" and is worried about him going home safely. SLP and OT evaluate him and discovers issues with executive functioning related to his ability to manage his own medications. His daughter is updated and feels relieved that his memory issues have finally been addressed. She agrees to increase her support with medications, follow-ups, and driving. Resources for community support are provided to her.

Case 5: Mr E presents after a fall. PT is asked to evaluate and fit a fracture walking boot for his distal fibula fracture. During the evaluation, PT notes gait mechanics, motor planning, and perceptual and balance issues that are more consistent with a central nervous system deficit than an ankle fracture. PT suggests neuroimaging to the ED provider and 2 brain tumors are diagnosed. The patient is admitted for neurosurgery.

Case 6: Mr F presents with recurrent peripheral vertigo during a busy shift. The ED provider briefly attempts canalith repositioning maneuvers that are not successful but must keep seeing critically ill patients. In lieu of medications and a period of observation, the provider consults PT who is successful in improving symptoms with additional repositioning maneuvers, and the patient is discharged to home with a referral to outpatient vestibular rehabilitation specialist.

### **SUMMARY**

The specialty consult services of PT/OT/SLP have been shown to improve care delivery in the ED setting. Each discipline offers an area of expertise that can be integrated

into disposition planning. PT and OT referrals are especially beneficial for older patients in the case of falls, and their intervention has been shown to mitigate the risk of future falls and reduce hospital admissions. Although a growing area of practice, rehabilitation services are underused in the ED. Successful implementation starts with a change in mindset by appreciating that older adults in the ED face the same challenges as those admitted upstairs.

## CLINICS CARE POINTS

- PT/OT intervention in the ED can decrease admission rates.
- PTs provide assessments and education that are effective in reducing falls for at-risk older patients.
- OTs can determine safety around discharge to home with respect to performing activities of daily living.
- PTs can determine safety around discharge to home with respect to mobility and balance.
- SLPs perform swallow assessments to determine the presence of dysphagia and patient education to prevent aspiration.
- PTs are musculoskeletal specialists that can manage conditions affecting the spine and extremities.
- The role of PT/OT/SLP in the ED is novel but makes good clinical sense.

## DISCLOSURE

The authors have nothing to disclose.

## REFERENCES

1. Fleming-McDonnell D, Czuppon S, Deusinger SS, et al. Physical therapy in the emergency department: development of a novel practice venue. *Phys Ther* 2010;90(3):420–6.
2. James K, Jones D, Kempenaar L, et al. Occupational therapy and emergency departments: a critical review of the literature. *Br J Occup Ther* 2016;0(0):1–8.
3. Miller E, Wightman E, Rumbolt K, et al. Management of fall-related injuries in the elderly: a retrospective chart review of patients presenting to the emergency department of a community-based teaching hospital. *Physiother Can* 2009; 61(1):26–37.
4. Ferreira GE, Traeger AC, O’Keeffe M, et al. Staff and patients have mostly positive perceptions of physiotherapists working in emergency departments: a systematic review. *J Physiother* 2018;64(4):229–36.
5. McClellan CM, Greenwood R, Bengler 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):384–7.
6. Sutton M, Govier A, Prince S, et al. Primary-contact physiotherapists manage a minor trauma caseload in the emergency department without misdiagnoses or adverse events: an observational study. *J Physiother* 2015;61(2):77–80.
7. Matifat E, Perreault K, Roy J-S, et al. Concordance between physiotherapists and physicians for care of patients with musculoskeletal disorders presenting to the emergency department. *BMC Emerg Med* 2019;19(67):1–10.

8. Taylor NF, Norman E, Roddy L, et al. Primary contact physiotherapy in emergency departments can reduce length of stay for patients with peripheral musculoskeletal injuries compared with secondary contact physiotherapy: a prospective non-randomised controlled trial. *Physiotherapy* 2011;97(2):107–14.
9. Bird S, Thompson C, Williams KE. Primary contact physiotherapy services reduce waiting and treatment times for patients presenting with musculoskeletal conditions in Australian emergency departments: an observational study. *J Physiother* 2016;62(4):209–14.
10. Lebec MT, Jogodka CE. The physical therapist as a musculoskeletal specialist in the emergency department. *J Orthop Sports Phys Ther* 2009;39(3):221–9.
11. Spang L, Holmqvist K. Occupational therapy practice in emergency care: occupational therapists' perspectives. *Scand J Occup Ther* 2015;22(5):345–54.
12. Carlill G, Gash E, Hawkins G. Preventing unnecessary hospital admissions: an occupational therapy and social work service in an accident and emergency department. *Br J Occup Ther* 2002;65(10):440–5.
13. Morphet J, Griffiths DL, Crawford K, et al. Using transprofessional care in the emergency department to reduce patient admissions: a retrospective audit of medical histories. *J Interprof Care* 2016;30(2):226–31.
14. Arendts G, Fitzhardinge S, Pronk K, et al. The impact of early emergency department allied health intervention on admission rates in older people: a non-randomized clinical study. *BMC Geriatr* 2012;12(8):1–6.
15. Ekberg O, Hamdy S, Woisard V, et al. Social and psychological burden of dysphagia: its impact on diagnosis and treatment. *Dysphagia* 2002;17(2):139–46.
16. Lin LC, Wu SC, Chen HS, et al. Prevalence of impaired swallowing in institutionalized older people in Taiwan. *J Am Geriatr Soc* 2002;50(6):1118–23.
17. Rofes L, Arreola V, Romea M, et al. Pathophysiology of oropharyngeal dysphagia in the frail elderly. *Neurogastroenterol Motil* 2010;22(8):851.e230.
18. Kesteloot L, Lebec MT. Physical therapist consultation in the emergency department: a multiple case report describing three Arizona programs. *J Acute Care Phys Ther* 2012;3(3):224–31.
19. Watson WT, Marshall ES, Fosbinder D. Elderly patients' perceptions of care in the emergency department. *J Emerg Nurs* 1999;25(2):88–92.
20. Pugh A, Roper K, Magel J, et al. Dedicated emergency department physical therapy is associated with reduced imaging, opioid administration, and length of stay: a prospective observational study. *PLoS One* 2020;15(4). e0231476-12.
21. Lebec MT, Cernohous S, Tenbarge L, et al. Emergency department physical therapy service: a pilot study examining physician perceptions. *Internet J Allied Health Sci Pract* 2010;8(1):1.
22. DiCaprio MR, Covey A, Bernstein J. Curricular requirements for musculoskeletal medicine in American medical schools. *J Bone Joint Surg Am* 2003;85-A(3):565–7.
23. Ciccarella S, et al. Incorporating physical therapist practice in the emergency department: a toolkit for practitioners. American Physical Therapy Association website. 2012. Available at: [https://fptcu.com/Gep%20Files/Emergency%20PT/Reading%205%20EmergencyDepartment\\_Toolkit%20for%20PT.pdf](https://fptcu.com/Gep%20Files/Emergency%20PT/Reading%205%20EmergencyDepartment_Toolkit%20for%20PT.pdf). Accessed May 12, 2016.
24. Russell MA, Hill KD, Day LM, et al. A randomized controlled trial of a multifactorial falls prevention intervention for older fallers presenting to emergency departments. *J Am Geriatr Soc* 2010;58(12):2265–74.



25. Lloyd C, Hilder J, Williams PL. Emergency department presentations of people who are homeless: the role of occupational therapy. *Br J Occup Ther* 2017; 80(9):533–8.
26. Smith T, Rees V. An audit of referrals to occupational therapy for older adults attending an accident and emergency department. *Br J Occup Ther* 2004; 67(4):153–8.
27. Manzano-Santaella A. From bed-blocking to delayed discharges: precursors and interpretations of a contested concept. *Health Serv Manage Res* 2010;23(3): 121–7.
28. Ad Hoc Committee. Scope of practice in speech-language pathology. American Speech-Language-Hearing Association website. 2016. Available at: <https://www.asha.org/policy/SP2016-00343/>. Accessed June 25, 2020.
29. Meals C, Roy S, Medvedev G, et al. Identifying the risk of swallowing-related pulmonary complications in older patients with hip fracture. *Orthopedics* 2016;39(1): e93–7.
30. Kim HS, Strickland KJ, Mullen KA, et al. Physical therapy in the emergency department: a new opportunity for collaborative care. *Am J Emerg Med* 2018; 36(8):1492–6.