

# PRINCIPLES OF PM&R



# PHYSICAL MEDICINE AND REHABILITATION FUNDAMENTALS AND OVERVIEW

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## WHAT IS PHYSICAL MEDICINE AND REHABILITATION?

Physical medicine and rehabilitation (PM&R), also known as physiatry, is a medical specialty that promotes a patient-centered approach to improve function and quality of life. PM&R “focuses on the diagnosis, evaluation, and management of persons of all ages with congenital or acquired physical and/or cognitive impairments, disabilities, and functional limitations.”<sup>1</sup> The specialty began in the late 1920s and was recognized by the American Medical Association in 1945. PM&R physicians, also known as physiatrists, have expertise and knowledge about the biomechanics of the human body and an extensive understanding and training on how mobility can impact quality of life. Physiatrists treat persons with a broad range of medical diagnoses related to illness, injury, or physical impairment using nonsurgical techniques. As experts in physical examination, physiatrists can design a unique treatment plan tailored to an individual’s physical impairments, goals, and needs. Treatment goals can include restoration of function, but may also be supportive and accommodative, or through adaptive means. This chapter introduces the reader to the medical specialty of PM&R and includes information on a spectrum of patients cared for, care settings, care collaborators, and medical education training and certification.

## EPIDEMIOLOGY

The number of individuals with disabilities in the United States is often underrecognized. According to the Centers for Disease Control and Prevention, greater than one in four individuals in the United States in 2020 identify as having a disability, accounting for 64 million people.<sup>2</sup> Over 11.1% of adults have a mobility-related disability, with nearly 11% reporting cognitive impairments. This makes this population one of the largest minority groups in the country.

## LEVELS OF CARE

Physiatrists treat patients at all levels of care across the medical continuum. The appropriate medical setting for each patient is determined by

their functional and medical needs. Patients often require a multidisciplinary team to optimize function and outcomes, and may be supervised by a physiatrist. The different levels of care are described in the following<sup>3,4</sup>:

- *Acute hospital*: Acute care hospitals treat patients who have developed an acute medical issue that may be life- or limb-threatening. These hospitals have access to the most advanced lifesaving equipment. Admission to acute care often occurs via the emergency department, but patients can also be directly admitted from the community if a physician deems their medical needs to be appropriate.
- *Inpatient Rehabilitation Facility (IRF)*: This hospital-based rehabilitation setting provides at least 15 hours of therapy per week, 24-hour rehabilitation nursing care, and 24-hour access to a physician. This level of care is often referred to as acute inpatient rehabilitation. Specific criteria are required for admission to this level of care:
  - The patient requires frequent or daily physician evaluations.
  - The patient requires multiple therapy disciplines (physical therapist, occupational therapist, speech language pathologist, and orthotics and prosthetics) and is able to participate in 15 hours of weekly therapy.
  - The patient requires a coordinated team of providers.
  - The patient's function is expected to improve to support community discharge.
- *Long-term care hospital (LTCH)*: LTCH is an acute care hospital for patients who require complicated recovery plan and prolonged hospitalization of 25 days or more. Patients are required to participate in therapies 5 days per week. Patients admitted to this level of care typically have two or more active medical issues that require three or more medical interventions, which *can* include:
  - Intravenous (IV) medications, continuous IV fluids, total parenteral nutrition (TPN) or tube feeds, or blood products
  - Ventilator weaning
  - Complex wounds or burns
- *Skilled nursing facility (SNF)*: SNF provides postacute care to patients who are deemed appropriate for daily skilled nursing care or therapy. Care at this level is deemed appropriate by a physician and the care needs are related to a hospital-related medical condition *or* a condition that started while in this setting.
- *Day rehabilitation*: Day rehabilitation is an outpatient multidisciplinary therapy program for patients who require two or more therapy disciplines but do not require hospital admission.
- *Outpatient rehabilitation*: Outpatient rehabilitation is an individual therapy discipline focused on dysfunction of a focal anatomic region or a specific goal. Treatment is often in a series of visits.

- *Home health:* Home health is for patients deemed homebound by the medical provider, meaning it is extremely difficult for the patient to leave their home and/or needs help doing so. The patient needs skilled nursing services and skilled therapy care on an intermittent basis.

## INTERDISCIPLINARY TEAM

Treating and managing complex medical and functional needs requires a team approach to optimize outcomes and function. The members of the multidisciplinary team are described in the following:

- *Physiatrist:* A physiatrist is a physician who has completed residency in the field of PM&R. The physiatrist serves as the team leader responsible for coordinating patient services, setting realistic expectations for both the patients and their families, and developing a treatment plan to improve the functional status of individuals with acute or chronic impairments.
- *Neuropsychologist/rehabilitation psychologist:* This is a doctoral-level licensed provider who assesses how the brain and nervous system influence cognition and behavior. The provider can help provide guidance for optimal treatment of patients with acquired or congenital brain impairments.
- *Case manager:* Case managers coordinate referrals, discharge planning, and social or community services.
- *Rehabilitation nurse (RN):* An RN is a nursing professional who specializes in rehabilitation, with training on managing unique medical needs of patients with physical impairments or disabilities. Care can include medication management, wound management, bowel and bladder management, and education of patients and caregivers.
- *Occupational therapist (OT):* An OT helps develop, recover, improve, or restore function of patients experiencing impairments related to work or activities of daily living (ADLs). ADLs are activities needed for daily living and include feeding, bathing, dressing, grooming and hygiene, and toileting. An OT can help improve fine motor skills, hand-eye coordination, emotional control, and sequencing of complex tasks, as well as identify modifications to the task or the environment. Other roles include enhancing or improving patients' psychosocial, behavioral, cognitive, or sensory skills.
- *Physical therapist (PT):* A PT helps restore function in patients with mobility impairments, weakness, restricted range of motion, or pain. The role of the PT is to help develop gross motor skills, identify and provide training for mobility device needs, improve endurance, and increase joint range of motion or stability.
- *Speech-language pathologist (SLP):* An SLP works to assess and treat patients with cognitive, communication, speech, or swallowing deficits. An SLP performs instrumented studies to evaluate dyspha-

gia, which can include videofluoroscopic swallow studies (VFSS) or fiberoptic endoscopic evaluation of swallowing (FEES) studies.

- *Respiratory therapist (RT)*: An RT assists patients with impaired respiration and those who require devices to help with proper respiration. Devices can include tracheostomy, mechanical ventilator, or phrenic nerve stimulator. An RT has expertise in managing these tools as well as in administering medications or other treatments via the airways. The role of an RT includes education of patients and their families related to home care of their devices.
- *Vocational rehabilitation specialist (VR)*: A VR is a counselor or therapist who works with patients to develop work and educational plans, facilitates community reintegration, and provides guidance or strategies to achieve realistic work or educational goals.
- *Orthotist*: An orthotist is a professional who assists people with disabilities by customizing braces and splints used to stabilize joints or support impaired or injured body parts. They are trained to assess the unique needs of the individual, determine the technical specifications of prescribed devices, fabricate the devices, and evaluate device fit and outcome.
- *Prosthetist*: A prosthetist is a professional who fabricates and fits artificial limbs to improve the quality of life of individuals with amputations.
- *Patient care technician (PCT)*: Under the supervision of healthcare professionals, a PCT can provide basic medical care, including measuring vital signs and recording other important data. In a rehabilitation setting, a PCT may assist with ADLs.

## TRAINING AND BOARD CERTIFICATION

- *Graduate medical training*: Training includes prerequisite completion of U.S. or Canadian medical school (MD or DO) or foreign medical school that meets certain requirements. A total of 48 months of clinical graduate training is required. Trainees must complete an initial 12 months of fundamental clinical skills residency program, followed by 36 months of PM&R medical training.<sup>1</sup>
- *Board certification*: The American Board of Physical Medicine and Rehabilitation (ABPMR) oversees diplomate training and certification. Board certification requires successful completion of a two-part examination.
- *Subspecialty training*: The ABPMR subspecialty training offers fellowship training on the following:
  - Brain injury medicine (12 months)
  - Neuromuscular medicine (12 months)
  - Pain medicine (12 months)
  - Pediatric rehabilitation medicine (24 months)

- Spinal cord injury medicine (12 months)
- Sports medicine (12 months)
- Additional fellowships without ABPMR certification include, but no limited to:
  - Musculoskeletal/spine fellowships
  - Stroke
  - Multiple sclerosis
  - Neurorehabilitation
  - Electrodiagnostic medicine
  - Cancer rehabilitation
  - Occupational and environmental medicine
  - Movement disorders

Physiatrists treat a variety of conditions, have the opportunity to treat patients throughout the spectrum of healthcare settings, and lead an interdisciplinary team of providers.

## REFERENCES

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