

Physical Medicine and Rehabilitation

An Introduction



The Basics

- Physical Medicine and Rehabilitation (PM&R)
- Related terminology
 - Physiatry/physiatrist
 - Rehabilitation Medicine



What is PM&R

“Branch of medicine emphasizing prevention, diagnosis, and treatment of disorders – particularly related to nerves, muscles, and bones – that may produce temporary or permanent impairment.”

--American Academy of PM&R

A Physiatrist...

- Specializes in clinical and diagnostic use of physical agents and exercises to provide physiotherapy for physical, mental, and occupational rehabilitation of patient.
- Examines patient, utilizing electrodiagnosis and other diagnostic procedures to determine need for and extent of therapy. --*Webster's Online Dictionary 2009*

Another Laymen's Definition

“A branch of medicine which aims to enhance and restore function ability and quality of life to those with physical impairments or disabilities.”

--*Wikipedia.org*

Physiatrists are sometimes referred to as
Muscle Doctors

Quick Clarification

IMPAIRMENT

Anatomical or physiological dysfunction

DISABILITY

Unable to perform a human activity

HANDICAP

Unable to meet a societal role

International Classification of Functioning, Disability, and Health (ICF)

ICF Terms in the context of health:

Body functions are the physiological functions of body systems (including psychological functions).

Impairments are problems in body function or structure such as a significant deviation or loss.

Activity is the execution of a task or action by an individual.

Participation is involvement in a life situation.

Activity limitations are difficulties an individual may have in executing activities.

Timeline

ORIGIN

As early as heat/cold modalities used for health benefits (time of Hippocrates)

DEFINED

Principles formulated during post WWI

CONSOLIDATED & EXPANDED

Post-WWII

ESTABLISHED

Approved as medical specialty in 1947

EVOLVED

In 1955 more than 21,200 cases of polio are reported. The polio epidemic dominated the attention of PM&R physicians and rehabilitation institutions expanded from institutions dedicated to the treatment of polio

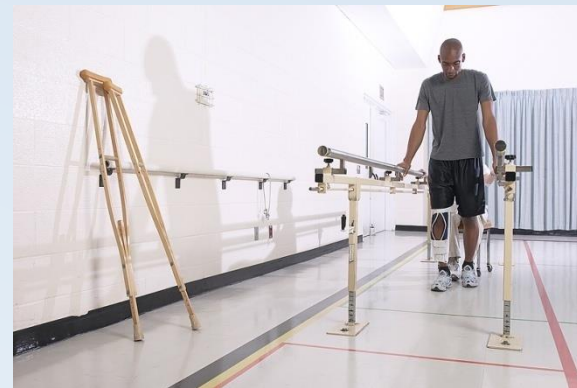
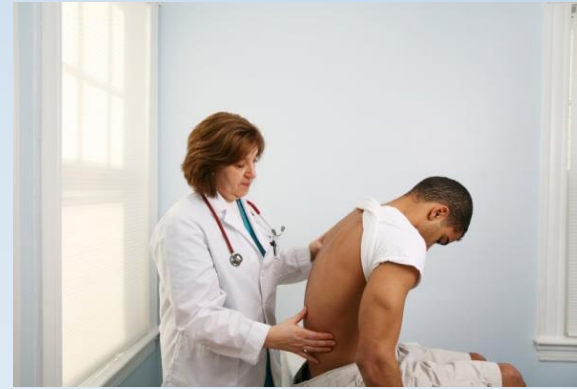


Common Conditions

- Spasticity and Movement Disorders
- Stroke
- Traumatic Brain Injury (TBI)
- Spinal Cord Injury (SCI)
- Multiple Sclerosis (MS) and other Neurological Conditions
- Pain
- Amputation
- Osteoarthritis
- Sports Injuries

Evaluation

History (include focus on function), physical exam, imaging

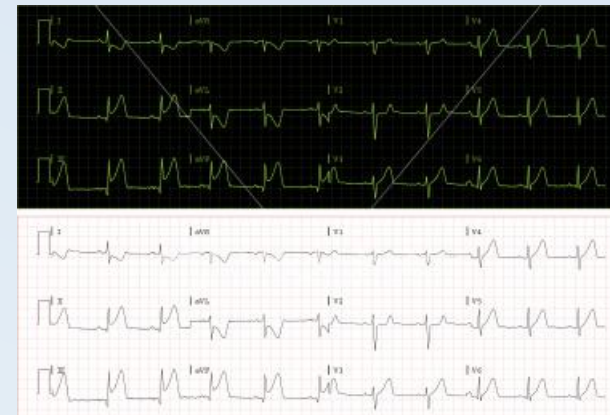


Evaluation

Electromyography



Nerve Conduction Study



Problems

Amputation

Aphasia

Cognitive Impairment

Depression

Dysphagia

Gait Dysfunction

Heterotopic Ossification

Hypoventilation

Malnutrition

Neurogenic Bladder

Pain

Paralysis and Paresis

Radiculopathy

Skin Breakdown

Spasticity

Weak Muscles

~~Problems~~ Solutions

Amputation

Aphasia

Cognitive Impairment

Depression

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Spasticity

Weak Muscles

Solutions

Orthoses



Malnutrition
Neurogenic Bladder
Pain
Paralysis and Paresis
Radiculopathy
Skin Breakdown
Spasticity
Weak Muscles

Solutions

Amputation
Aphasia
Cognitive Impairment
Depression
Dysphagia
Gait Dysfunction
Heterotopic Ossification
Hypoventilation

Electrical Stimulation



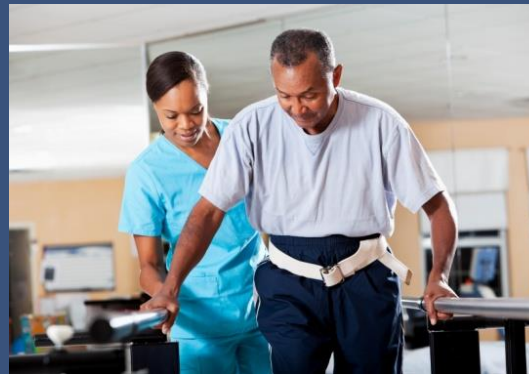
Thickening Mix



Solutions

Amputation
Aphasia
Cognitive Impairment
Depression
Dysphagia
Gait Dysfunction
Heterotopic Ossification
Hypoventilation

Gait Training



Solutions

Manual Therapy



Botox Baclofen Pump



Medication



Malnutrition
Neurogenic Bladder
Pain
Paralysis and Paresis
Radiculopathy
Skin Breakdown
Spasticity
Weak Muscles

Solutions

Water Therapy

Heat/Cold

Transcutaneous Electrical
Nerve Stimulation

Medication Control

Malnutrition
Neurogenic Bladder

Pain

Paralysis and Paresis
Radiculopathy
Skin Breakdown
Spasticity
Weak Muscles

Solutions

Amputation

Aphasia
Cognitive Impairment
Depression
Dysphagia
Gait Dysfunction
Heterotopic Ossification
Hypoventilation

Prostheses

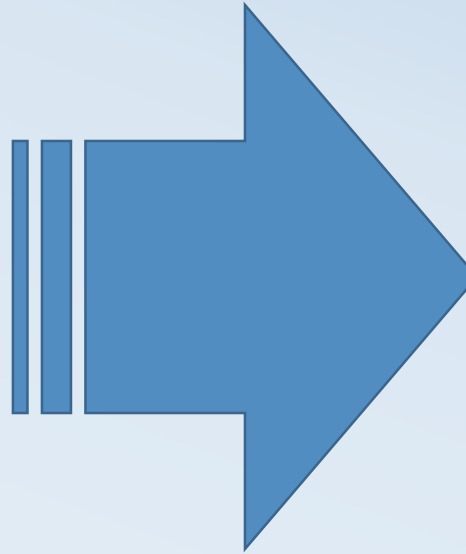


Goal

Overall Functional Enhancement

MAXIMIZE

- Independence
- Dignity
- Quality of Life



Physical
Psychological
Social
Vocational
Educational

Task at Hand

1. Optimize Function
2. Relieve Pain
3. Prevent and Manage Complications
4. Coordinate Care
- 5. Educate and Empower Patients**

Practice Settings

INPATIENT

- Acute Care Hospitals
- Long Term Acute Care Hospitals
- Inpatient Rehabilitation Units of Acute Care Hospitals
- Skills Nursing Home with Subacute Rehabilitation Programs
- Nursing Homes

OUTPATIENT

- Hospital Clinic
- Acute Rehab Clinic
- Private Office

Sample Inpatient Experience

Brain Injury

Burn

Cancer

Cardiac

Neurologic Disorder

Orthopedic

Pediatric

Polytrauma

Pulmonary

Spinal Cord Injury

Stroke

Transplant

Sample Outpatient Experience

Amputee

Arthritis

Cerebral Palsy

Fibromyalgia

EMG & NCS

Musculoskeletal

Ortho-Rehab

Pain

Pediatric

Spasticity

Spina Bifida

Spine

Stroke

Wound Care

Interdisciplinary Teams

Medical Professionals

Critical Care

General Surgery

Geriatrics

Internal Medicine

Orthopedics

Oncology

Neurology

Neurosurgery

Pediatrics

Psychiatry

Rheumatology

Urology

Interdisciplinary Teams

Allied Health Professionals

Dietician

Music Therapist

Occupational Therapist

Pet Therapist

Physical Therapist

Prosthetist / Orthotist

Psychologist

Recreational Therapist

Rehabilitation Nurse

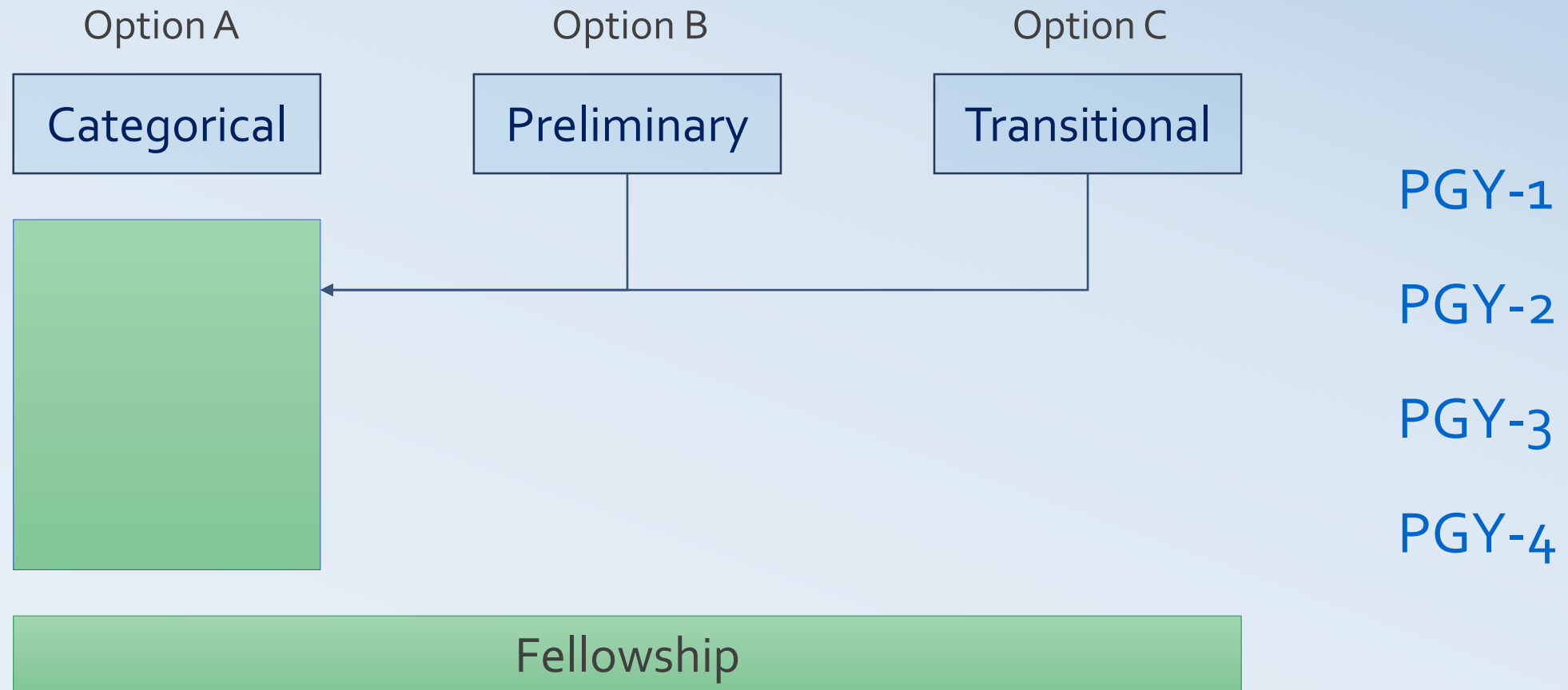
Respiratory Therapist

Speech & Language

Social Worker

Vocational Counselor

PM&R Residency



Fellowships

Electrodiagnostic
Medicine
Hospice and Palliative
Medicine*
Interventional Spine
Neuromuscular
Medicine*
Pain Medicine*

Rheumatology
Pediatric Rehabilitation
Medicine*
Spinal Cord Injury
Medicine*
Sports Medicine*
Stroke
Brain Injury Medicine*

**Denotes sub-specializations certified by ABPMR*

Lots of Work Ahead

- Aging Population
- Decreasing Injury Mortality
- High Healthcare Costs
- New Applications
- Innovative Technology
- Regeneration/Stem Cell Advances
- Artificial Intelligence
- Robotics & Computer Science



Additional Resources

Associations

Association of Academic Physiatrists

www.physiatry.org

American Academy of Physical Medicine & Rehabilitation

www.aapmr.org

American Congress of Rehabilitation Medicine

www.acrm.org

American Board of Physical Medicine & Rehabilitation

www.abpmr.org

Additional Resources

Journals

American Journal of Physical Medicine & Rehabilitation

www.ajpmr.org

Archives of Physical Medicine and Rehabilitation

www.archives-omr.org

PM&R

www.pmrjournal.org

Thank You!

*These slides were adapted from a presentation
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