

Goals and Objectives for Neurorehabilitation Rotation

LOGISTICS OF NEUROREHABILITATION ROTATION

Neurology residents will spend most of their time on the inpatient services of the Rehabilitation Institute of Saint Louis (TRISL). Residents can choose to rotate on one of three primary rehabilitation services: Stroke, Brain Injury, or Spinal Cord Injury. There is a process of on-boarding in order to gain access to the TRISL EMR (Ace-It). Please contact Ms. Angie Valleck at Angela.Valleck@encompasshealth.com and Ms. Donna Barbier at dbarbier@wustl.edu as early as possible to begin this process.

The Neurology residents should take the first admission on days when they have a continuity clinic (assuming the admit arrives before they go to clinic). If they go to the Barnes clinic or one of the rehab clinics, they should return to the rehab floor to admit patients after clinic.

Residents are not required to return to the hospital to admit patients after Connect Care Clinics, but are encouraged to do so if possible.

Residents are excused from required lectures at BJH that conflict with lectures or clinical duties at TRISL and should instead attend all didactic lectures offered at TRISL. Sign-in at all conferences; attendance is reported to the Program Director.

Goals & Objectives for Neurorehabilitation Rotation (All Training Levels)

Residents rotating on the Neurorehabilitation service will participate in the evaluation and care of patients recovering from neurologic injuries, with special emphasis on rehabilitation for victims of cerebral trauma, stroke, or spinal cord injury. Residents will participate in the care of inpatients at the Rehabilitation Institute of Saint Louis (TRISL) and, when applicable, in outpatient rehabilitation clinics. Clinical expectations are similar for all training levels. Senior residents are expected to reach a more advanced level of knowledge and may choose to specialize and gain more in-depth experience in specific areas of neurorehabilitation.

Patient Care

Goal: The resident will gain experience in understanding modalities of therapy, services available, and their appropriate application to patients. Residents will also gain understanding of the prognosis for recovery and for effectiveness of rehabilitation in enhancing recovery. Residents assist in evaluating patients for referral to rehabilitation and assist in directing care for patients undergoing neurorehabilitation. They attend teaching rounds and rehabilitation clinics as applicable.

Residents are expected to:

Objectives:

- ☐ Directly observe physicians and therapists performing the evaluations and thereby, learn to perform these evaluations themselves.
- ☐ Admit as the primary care provider patients with neurologic deficits for inpatient rehabilitation.
- ☐ Be responsible for all administrative care related to their patient including but not limited to:
 - Daily progress notes, discharge summaries, team rounds summaries,
 - Daily patient medication orders,
 - Comprehensive therapy orders

- ☐ Diagnose physical, cognitive, and psychosocial impairments in rehabilitation patients.
- ☐ Perform a comprehensive musculoskeletal and neurological examination on rehabilitation patients. For selected SCI patients, perform an ASIA exam, including a rectal examination to accurately assess reflex function, sensation, and voluntary motor function.
- ☐ Perform daily examinations on inpatients to prevent medical complications.
- ☐ Create a differential diagnosis appropriate to the physical findings.
- ☐ Understand how patients with physical impairments (ie. paraplegia, tetraplegia, hemiplegia) perform bed-to-wheelchair/toilet transfers and assist with transfers and bed mobility in conjunction with therapists as appropriate.
- ☐ For patients with neurogenic bladder, attend a urodynamic study as applicable and alter bladder management based on urodynamic and post-void residual data.
- ☐ For patients with bowel dysfunction, design a bowel routine for the neurorehabilitation patient with upper motor neuron bowel vs. lower motor neuron bowel impairment
- ☐ Become familiar with the physiology of respiratory disorders that affect patients with neurologic deficits.
- ☐ Observe tracheobronchial suctioning of a patient with tracheotomy tube, as applicable.
- ☐ Understand the principles of trach weaning and decannulation and discuss with medical team as well as respiratory therapy regarding moving a patient through this process.
- ☐ As applicable, discuss when a ventilator-dependent spinal cord injured individual is weanable, taking into account various clinical factors including level of injury, completeness of injury, and measurements of respiratory function.
- ☐ Develop a wound care management plan for a patient with pressure ulcers in conjunction with wound care team at TRISL. Participate with wound dressing and debridement as indicated.
- ☐ Recommend appropriate inpatient and outpatient rehabilitation plans based upon the severity of injury, including level of spinal cord injury, and co-morbid conditions.
- ☐ Learn to order appropriate diagnostic tests and interpret the findings of the ordered tests.
- ☐ Be knowledgeable about the different types of wheelchair seating, positioning, and orthotics to maximize functional activity.

Medical Knowledge

Goal: The resident must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to care of patients with urgent and chronic medical problems. Residents are expected to:

Objectives:

- ☐ Report trends in epidemiology of BI, SCI, or Stroke concerning:
 - Incidence and prevalence
 - Age at injury/incident
 - Gender and ethnicity
 - Etiology
 - Life expectancy and causes of death
 - Associated injuries/co-morbidities
- ☐ Apply learned anatomy and physiology as appropriate.
- ☐ Become familiar with common radiologic studies used to assess patients with these conditions (ie. x-ray, CT, MRI).

- ❑ Describe current pharmacologic and surgical treatment for acute neurologic injuries.
- ❑ Define spasticity. Describe the Ashworth scale.
- ❑ Develop a keen understanding of neuroanatomy, including cerebral anatomy, spine anatomy, and white matter/spinal cord tracts.
- ❑ As appropriate based on service, become familiar and comfortable with stroke syndromes, classification of brain injuries, ASIA classification, and recognized spinal cord injury syndromes, paying special attention to how these classifications help predict prognosis, recovery, and affect overall recovery.
- ❑ Describe the risk factors of pressure ulceration, prevention procedures, the international classification, and the management principles of ulcerations.
- ❑ Describe the pathophysiology of autonomic dysreflexia (specific to SCI), as well as upper and lower motor neuron bladder and bowel dysfunction.
- ❑ Identify and treat specific disorders that are commonly seen in the neurorehabilitation population setting, including but not limited to:
 - DVT and prophylaxis, decubiti, stress ulcers
 - Autonomic dysreflexia (non-pharmacologic and pharmacologic), neurogenic bowel/bladder, obstructive uropathy with and without stones
 - Pneumonia, UTI, ileus, and other pulmonary/cardiac/GI complications
 - Spasticity, heterotopic ossification
 - Depression, sexual dysfunction, metabolic changes
- ❑ Identify and manage depression and adjustment disorder with psychological assistance.
- ❑ Understand the kinesiology of upper extremity function and the use of muscle substitution patterns in retraining, particularly useful in cervical spinal cord injuries.
 - Describe the indications and contraindications of muscle and tendon transfers and other operative procedures to enhance function as applicable.
- ❑ Identify the indications and usage of functional electrical stimulation (FES) in rehabilitation of neurologic deficits.
- ❑ As outpatient experiences are available, focus on evaluation and management outpatient neurorehabilitation patients with: joint pain, spinal pain, entrapment neuropathies, renal stones, UTI, contractures, spasticity, depression, neuropathic and central pain, respiratory illness, cholesterol disorders, metabolic issues: Learn the physiology and basic science behind these disorders.
- ❑ Determine appropriate goals for patients with neurologic functional deficits
- ❑ Learn the complications of a patient aging with neurologic deficits as this applies to inpatient admission and severe illness, as well as longitudinal outpatient care
- ❑ Become familiar with available assistive technology for optimization of functional independence for patients with neurologic deficits
- ❑ Become familiar with the process of creating a wheelchair prescription for a neurorehabilitation patient.

Practice-based Learning and Improvement

Goal: The resident must demonstrate the ability to investigate and evaluate their care of medical patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. Residents are expected to develop skills and habits to be able to meet the following goals:

Objectives:

- ❑ Evaluate their own exam skills and knowledge and incorporate feedback from others.
- ❑ Investigate and apply evidence from scientific studies to enhance patient care

- throughout the rotation.
- ☐ Use information technology (computers, journals, etc.) to access and manage patient information and support their own education and treatment decisions.
 - ☐ Participate in ACT review meetings at TRISL in a manner that critiques and evaluates your own performance and identifies key learning points.
 - ☐ Facilitate the education of junior residents and medical students who rotate on neurorehabilitation services at TRISL.
 - ☐ Attend and participate in conferences and rounds.
 - ☐ Provide in-service talks to allied health personnel as applicable.
 - ☐ Investigate outcomes of treatment decisions.
 - ☐ Participate in teaching rounds on a weekly basis with service attending, reviewing pathophysiologic principles underpinning rehabilitation and recovery from injury.

Interpersonal and Communication Skills

Goal: The resident must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Residents are expected to:

Objectives:

- ☐ Elicit information using effective questioning and listening skills.
- ☐ Demonstrate caring and respectful behaviors (verbal and non-verbal) with patients.
- ☐ Establish trust and maintain rapport with patients and family.
- ☐ Complete all chart notes and dictations in a timely manner.
- ☐ Present material clearly and accurately to patients and family.
- ☐ Regularly visit the therapy areas to observe patients engaged in restorative activities.
- ☐ Effectively communicate patient needs, verbally and in writing, to all multidisciplinary staff and other physicians involved with the patient.
- ☐ Prescription writing: write inpatient therapy orders and prescribe home health or outpatient prescriptions that include the following essential elements: diagnosis, parts to be treated, procedures to be used with specifications of techniques and time, special instructions or precautions, home instructions for the patient, and number and frequency of treatments.
- ☐ Utilize effective listening skills.
- ☐ Participate in all relevant rounds and discussions.
- ☐ Participate and eventually lead multidisciplinary rounds and family conferences as appropriate.
- ☐ Present findings clearly and concisely to supervising faculty so that management can be discussed.

Professionalism

Goal: The resident must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:

Objectives:

- ☐ Show leadership and become proficient at organizing and leading a family meeting.
- ☐ Lead a multidisciplinary team in the care of neurorehabilitation patients.
- ☐ Exemplify respect and compassion towards patients.
- ☐ Show reliability, punctuality, integrity, and honesty.
- ☐ Accept responsibility for own actions and decisions.
- ☐ Apply sound ethical principles in practice, including patient confidentiality, informed consent, provision and withholding of care, and interactions with

insurance or disability agencies.

- ☐ Complete all required chart documentation including admission notes, progress notes and discharge summaries, admission and discharge ASIA exams.
- ☐ Consider the effects of personal, social, or cultural factors in the disease process and patient management.
- ☐ Demonstrate sensitivity to the patients who have different ages, social status, races, and genders.

Systems-based Practice

Goal: The resident must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

Objectives:

- ☐ Gain knowledge about vocational rehabilitation and community resources for persons with neurologic injuries and resultant impairments in function.
- ☐ Collaborate and work effectively with other health professionals and maintain appropriate behaviors.
- ☐ Assess how decisions affect others – patients, family, other health care professionals.
- ☐ Integrate care of patients across hospital and community settings.
- ☐ Recognize when tests are appropriate or may be under- or over-utilized.
- ☐ Understand the cost of the treatments and diagnostic tests that are ordered.
- ☐ Describe the relevance and utility of the Functional Independence Measure (FIM) as well as other rehabilitation measures commonly used in practice to assess functional recovery.
- ☐ Gain familiarity with the Inpatient Rehabilitation Facility Patient Assessment instrument (IRF-PAI) as part of patient admission to acute inpatient rehabilitation, including identification of impairment codes and co-morbidities.
- ☐ Understand which physicians are involved in the treatment of patients with disabilities and what their role is.
- ☐ Advocate for patients who need tests and treatments that might be inappropriately denied.
- ☐ Describe Medicare and Medicaid requirements as it relates to documentation, elements of the exam, billing procedures, and codes.
- ☐ Realize limitations on the ability of patients to pay for their medications, therapies, or equipment and help identify resources to bridge gaps in care as appropriate.

Evaluations: At the end of the rotation, the attending physician who worked with the resident will send a written evaluation to the Neurology Residency Director.