

Pediatric Neurology

Goals and Objectives

Patient care:

GOALS: Residents are expected to provide patient care that is family-centered, developmentally and age appropriate, compassionate, and effective for the treatment of health problems and the promotion of health. They should be able to care appropriately for the range of illnesses commonly seen by pediatric neurologists.

OBJECTIVES:

- Obtain a comprehensive and accurate medical history pertinent to the pediatric neurological disorders
- Perform a neurological examination in children of different ages
- Evaluate a child with a neurological disorder and be able to form an appropriate differential diagnosis
- Perform a lumbar puncture
- Diagnose, explain, and manage the patient with the following neurologic conditions:
 - absence seizures, simple febrile seizures, and simple generalized tonic-clonic seizures
 - headaches
 - transient neurological disturbances due to drug ingestions (e.g. antihistamines, benzodiazepams)
 - viral meningitis
 - attention problems including ADHD
 - simple tics
- Identify, explain, initially manage, and refer the following neurological or neuromuscular conditions:
 - acute encephalopathy
 - bacterial meningitis
 - brain tumor
 - initial evaluation for cerebral palsy
 - encephalitis
 - abnormal movements (chorea, ataxia, complex tics)
 - neurocutaneous syndromes
 - muscle weakness, flaccidity, or paralysis suggestive of Guillain-Barre, muscular dystrophy, or hypotonia
 - complex seizures that are difficult to diagnose or manage
 - stroke

Medical Knowledge:

GOALS: Residents must consistently demonstrate proficiency in obtaining knowledge through reading the reference literature, clinical discussions, and didactic lectures with the pediatric neurology faculty members. They will demonstrate the ability to acquire, critically interpret, and apply this knowledge in patient care.

OBJECTIVES:

- Understands the dynamics of a developing brain and can identify the consequences of insult and defects occurring in different developmental stages
- Describe normal neurological development, including language acquisition, cognition, motor development, loss of primitive reflexes, and socialization.
- Explain the findings on clinical history and examination that suggest neurological dysfunction that requires further evaluation and treatment.
- Differentiate a peripheral from a central nervous system lesion, diffuse from focal, and static from progressive neurological dysfunction.
- Create a strategy to determine if the following signs and symptoms are caused by a neurological or neuromuscular disease process:
 - vomiting
 - weakness
 - seizures
 - developmental delay
 - spasticity
 - hypotonia
 - abnormal movement or tics
 - headache
- Explain the characteristics of simple febrile seizures, including epidemiology, genetic predisposition, natural history, risk factors for a seizure disorder, and treatment options.
- Compare and contrast the symptoms associated with tension headaches, migraine headaches, chronic daily headaches, and headaches associated with increased intracranial pressure and sinus disease.
- Discuss the pharmacologic and non-pharmacologic treatment of migraine and tension headaches
- Explain the findings on clinical history, examination, and investigation that suggest a seizure disorder and classify the seizure as generalized, focal, or complex partial.
- Discuss the diagnostic value of tests to aid in the diagnosis of neurological diseases, including indications, limitations, and costs. Discuss the following tests: lumbar puncture, EEG, head CT, head MRI, EMG, and nerve conduction study.
- Compare and contrast the indications, contraindications, side effects, and common drug interactions of the most commonly used neurological drugs.

Practice-Based Learning and Improvement:

GOALS: Residents are expected to demonstrate the knowledge, skills, and attitudes needed for continuous self-assessment. They are expected to investigate and evaluate patient care practices and to appraise and assimilate clinical information to make appropriate patient management decisions.

OBJECTIVES:

- Consistently review the pediatric neurology literature using both computer and web-based information
- Consistently evaluates own performance, identifies gaps in knowledge-base, and targets learning to fill these gaps
- Consistently demonstrate learning from error
- Works well with other learners to enhance the common knowledge
- Willing to provide, request, and accept feedback about performance
- Facilitates the learning of students, junior residents, and other health care professionals (PL-3)

Interpersonal and Communication Skills:

GOALS: Residents are expected to consistently demonstrate interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and colleagues.

OBJECTIVES:

- Creates and sustains a therapeutic and ethically sound relationship with patients and their families
- Uses consultants appropriately and communicates effectively with them in a timely fashion
- Maintains accurate and timely medical records
- Provides follow up to patients about laboratory and radiologic studies.
- Identifies the role of other specialists (e.g. neurosurgery, rehabilitative medicine, psychology, psychiatry, and neuropsychology) in the treatment of children with common neurological disorders.

Professionalism:

GOALS: Residents are expected to understand and demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

OBJECTIVES:

- Consistently acts in the best interest of patients and their families.
- Consistently demonstrates a caring and respectful demeanor when interacting with patients and families
- Maintains patient/family confidentiality
- Demonstrates sensitivity to and respect for differences in race, ethnicity, culture, socioeconomic status, educational attainment, age, gender, sexual preference, and disability
- Applies fundamental bioethical principles to the provision of care
- Conscientiously punctual, reliable, and dresses in an appropriate and professional manner
- Follows hospital procedures for acknowledging, reporting, and correcting errors
- Discusses errors honestly with families, when appropriate

System-Based Practice:

GOALS: Residents are expected to understand how to practice cost-effective, high-quality health care and advocate for patients within the context of the health care system. They should be able to work effectively with a multi-disciplinary team of providers to aid in the best outcomes possible.

OBJECTIVES:

- Consistently advocates for patients and families and helps them navigate the healthcare system by assisting them in making appointments, scheduling studies in a timely manner, and calling other providers to communicate about the patient, when necessary
- Describes billing and coding procedures and their supporting documentation
- Appropriately refers and follows-up patients when necessary
- Demonstrate appropriate communication and collaboration with subspecialty consultants and ancillary staff

PEDIATRIC NEUROLOGY RESOURCES

Online Resources

American Board of Psychiatry and Neurology

www.abpn.com

American Headache Society

www.ahsnet.org

American Neurological Association

www.aneuroa.org

Epilepsy Education Association

www.iupui.edu/~epilepsy

National Headache Foundation

www.headaches.org

Pain.com

www.pain.com

American Academy of Neurology

www.aan.com

Child Neurology Home Page

waisman.wisc.edu/child-neuro/index.html

American Epilepsy Society

www.aesnet.org

Epilepsy Foundation

Efa.org

READING MATERIAL

- 1) G. Fenichel: Clinical Pediatric Neurology, A Signs and Symptoms Approach. 5th Edition, 2005.
- 2) H. Singer: Treatment of Pediatric Neurologic Disorders, 2005
- 3) The attendings will hand out supplemental reading materials when appropriate.