

## **Pediatric Residency Child Neurology Elective**

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**Goals:** Over the past several years, it has become apparent that many graduating pediatric and med-peds residents are not comfortable in their knowledge of many common childhood neurologic conditions, their diagnostic work up, or their treatments. In an attempt to rectify this situation, Dr Desselle, as director of the pediatric residency program, and Dr Deputy have worked to create a predominantly outpatient child neurology required elective (or “selective”). The goal of this rotation is to familiarize pediatric residents with frequently encountered outpatient pediatric neurology disorders, their evaluation, and their treatment. Another goal is to teach the rotating pediatrics residents about the neurological examination. The rotation is geared toward outpatient, office-based neurological referrals. Therefore, the most frequently encountered neurological conditions will be emphasized. Also, it is important to look at these conditions from the “eyes” of a practicing pediatrician, and not necessarily from the perspective of a child neurologist. Given the relative shortage of child neurologists nationwide, it is important that today’s graduating pediatricians be comfortable in diagnosing and managing many pediatric neurology conditions on their own without the assistance of child neurologists. It is equally important for pediatricians to recognize severe neurological illness and to make appropriate referrals to child neurologists when necessary.

**Learning Objectives:** Based on the above goals, the following learning objectives will be emphasized:

1. The pediatric resident will demonstrate competency in performing a complete neurologic examination on one or more outpatients. Child neurology faculty will evaluate the different components of the examination (ie Mental Status, Cranial Nerves, Motor, Sensory, Coordination, and Gait) and fill out an evaluation form on each resident by the end of the month. Residents will also receive handouts concerning the neurologic examination and be given feedback continually during the rotation regarding their performance of the exam. Residents will need to learn which components of the neurologic examination need to be done in detail and which should be done as a screen for each patient depending on the particular chief complaint and other historical data.
2. Residents will learn about the evaluation of patients with developmental delay. They will be able to distinguish global developmental delay from pervasive developmental delay and “neuromuscular” developmental delay. They will learn the difference between conditions resulting in a static encephalopathy and those resulting in a neurodegenerative disorder. They

will learn about the usefulness and extent of diagnostic workup for patients with developmental disorders and about referrals to early intervention support agencies. The residents will be able to define and describe the various subtypes of cerebral palsy.

3. Residents will learn to identify and diagnose childhood autism and the other pervasive developmental disorders. They will learn about various diagnostic evaluations and interventions. They will become familiar with issues such as alternative “therapies” for autism and be able to discuss some of the literature concerning perceived associations between childhood vaccinations and autism.
4. Residents will learn to identify the characteristic features of childhood migraine. They will be able to identify features of headaches in children that suggest raised intracranial pressure or mass lesions. They will learn about both symptomatic and preventative migraine therapy.
5. Residents will learn about mild head trauma. They will be able to recognize signs of concussion and to provide family members with appropriate information regarding duration of symptoms and restrictions of physical activities. They will learn about post-concussion syndrome.
6. Residents will learn more about the evaluation and significance of febrile seizures. Simple versus complex features will be discussed as will various diagnostic work up options. Residents will learn about epidemiological risk factors for recurrent febrile seizures and for the development of epilepsy. Treatment options and family counseling will also be discussed.
7. Residents will learn to identify various seizure types based on ILAE classification. They will learn the difference between focal and generalized seizures. They will learn about the use of EEG and neuroimaging in the evaluation and diagnosis of epilepsy. The distinction between seizures and epilepsy will be made. Symptomatic and unprovoked seizures will be distinguished. Initiation and discontinuation of anticonvulsant medications will be discussed. Dosing, therapeutic levels, and side effects of various anticonvulsants will be discussed.
8. Residents will learn about diagnostic criteria for ADHD. Various co-morbid conditions such as learning disabilities, tic disorders, fine motor dyspraxia, depression, anxiety disorders, and bipolar affective disorder will be discussed. Treatment with environmental manipulation, behavioral modification, stimulant medications and other psychotropic medications will be discussed.

**Means of Achieving Goals and Learning Objectives:**

During the child neurology elective, residents will attend neurology clinics with the faculty mentioned above. Residents are encouraged to attend clinic with as many different faculty as possible to achieve a wide range of teaching perspectives. Specialty clinics (ie Muscular Dystrophy clinic, Movement Disorders clinic, Botox clinic, Spasticity clinic, etc) are offered only a few times per month and residents are encouraged to attend these clinics in addition to the “regular” outpatient neurology clinics of the faculty. Residents are also

encouraged to attend the Charity hospital child neurology clinic on Wednesday mornings as this is a specified teaching clinic. A list of each faculty's weekly clinic schedule will be provided to the residents at the onset of the child neurology elective.

Residents will be provided a handout about the various components of the neurologic examination at the start of the elective. During the faculty and teaching clinics, they will observe various faculty performing parts of the examination. The residents will also demonstrate competency in performing all or parts of the neurologic exam and will be evaluated by faculty several times during the month. Faculty will fill out a formal examination evaluation form for each resident during their elective. This form will become part of each resident's overall performance documentation at the end of the rotation.

Residents will be provided with a list of 10 questions pertaining to common outpatient child neurology conditions at the beginning of the rotation. Through clinical experience and reading, the residents will be able to competently answer all of the questions by the end of the rotation. Written responses to the questions will also become part of each resident's overall performance evaluation at the end of the rotation.

Various review articles and faculty-generated handouts will also be provided to the residents at the beginning of each rotation. Topics covered will pertain to those neurological disorders mentioned in the goals and learning objectives portions of this document.

The residents will be encouraged to attend any of several teaching conferences given during the elective including, but not limited to Child Neurology Grand Rounds, Adult Neurology Grand Rounds, Pediatric Neuropathology Conference, Pediatric Morning Report, Pediatric Grand Rounds.

Dr Deputy will also meet with the residents individually throughout the rotation to give feedback on each resident's performance and learning. Residents are encouraged to provide feedback to Dr Deputy or any of the child neurology faculty during the elective as to any problems they are experiencing with the rotation or its goals or objectives