CHILD NEUROLOGY

PROGRAM HANDBOOK AND POLICY MANUAL

2015-2016
# Program Personnel and Contact Information

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Residency Program Coordinator  
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Fax 720-777-7285  
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## Faculty Listing and Clinical/Research Interests

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Clinical / Research Interests</th>
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</thead>
<tbody>
<tr>
<td>Jennifer Armstrong Wells, MD</td>
<td>Research: Pediatric stroke</td>
</tr>
<tr>
<td>Timothy A. Benke, MD, PhD</td>
<td>Research: Synaptic development, neonatal seizures</td>
</tr>
<tr>
<td>Timothy Bernard, MD</td>
<td>Research: Pediatric Stroke, Medical Education</td>
</tr>
<tr>
<td>Amy Brooks-Kayal, MD</td>
<td>Research: Epilepsy, GABA receptors</td>
</tr>
<tr>
<td>Richard Boada, PhD</td>
<td>Research: Stroke</td>
</tr>
<tr>
<td>Kevin Chapman, MD</td>
<td>Research: Complex epilepsy</td>
</tr>
<tr>
<td>Abigail Collins, MD</td>
<td>Research: Movement Disorders</td>
</tr>
<tr>
<td>Cornelia (Lia) Drees, MD</td>
<td></td>
</tr>
<tr>
<td>Joyce Gibbons, PA</td>
<td></td>
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<tr>
<td>Carolyn Green, MD</td>
<td>Research: Medical Home</td>
</tr>
<tr>
<td>Mona Jacobson, CPNP</td>
<td></td>
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<tr>
<td>Joanne Janas, MD</td>
<td></td>
</tr>
<tr>
<td>Jennifer Janusz, PsyD</td>
<td>Research: Neurodegenerative disorders, Neurofibromatosis</td>
</tr>
<tr>
<td>Sita Kedia, MD</td>
<td>Research: Headache</td>
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<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Research Area</th>
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</thead>
<tbody>
<tr>
<td>Kelly Knupp, MD</td>
<td>Assistant Professor of Pediatrics and Neurology</td>
<td>Research: Epilepsy</td>
</tr>
<tr>
<td>Angelina Koehler, CPNP</td>
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<tr>
<td>Susan Koh, MD</td>
<td>Associate Professor of Pediatrics</td>
<td>Research: Epilepsy</td>
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<tr>
<td></td>
<td>Director – Epilepsy Unit</td>
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<tr>
<td>Pramote Laoprasert, MD</td>
<td>Associate Professor of Pediatrics and Neurology</td>
<td>Research: Neuro-imaging and epilepsy</td>
</tr>
<tr>
<td>Paul M. Levisohn, MD</td>
<td>Associate Professor of Pediatrics and Neurology</td>
<td>Research: Clinical trials in epilepsy, continuing medical education</td>
</tr>
<tr>
<td>Mary Anne Maddox, RN, MS, CPNP</td>
<td>Senior Instructor of Pediatrics</td>
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<tr>
<td>Bradford R. Miller, MD</td>
<td>Assistant Professor of Pediatrics and Neurology</td>
<td></td>
</tr>
<tr>
<td>Paul G. Moe, MD</td>
<td>Professor of Pediatrics and Neurology</td>
<td>Research: Spike wave stupor, infantile opsoclonus myoclonus</td>
</tr>
<tr>
<td>Jennifer Oliver, PNP</td>
<td>Instructor of Pediatrics</td>
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<tr>
<td>Padmini Palat, MD</td>
<td>Neurology Clerkship Director</td>
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<tr>
<td>Kristen Park, MD</td>
<td>Assistant Professor of Pediatrics and Neurology</td>
<td>Research: Epilepsy</td>
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<tr>
<td>Julie A. Parsons, MD</td>
<td>Associate Professor Pediatrics &amp; Neurology</td>
<td>Research: Muscle disorders</td>
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<tr>
<td>Teri Schreiner, MD</td>
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<tr>
<td>Alan Seay, MD</td>
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<tr>
<td>Amanda Sturgil, PNP</td>
<td>Instructor of Pediatrics</td>
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<tr>
<td>Stephanie Shea, PAC</td>
<td>Instructor of Pediatrics</td>
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<tr>
<td>Chelsey Stillman, PAC</td>
<td>Instructor of Pediatrics</td>
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</tr>
<tr>
<td>Scott Turner, PNP</td>
<td>Senior Instructor of Pediatrics and Neurology</td>
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</tr>
<tr>
<td>Greta N. Wilkening, PsyD</td>
<td>Associate Professor of Pediatrics</td>
<td>Research area: Memory disorders in children with brain disorders</td>
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<tr>
<td></td>
<td>Director, Neuropsychology</td>
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<tr>
<td></td>
<td>Clinical Neuropsychologist</td>
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<tr>
<td>Andy White, MD</td>
<td>Assistant Professor of Pediatrics and Neurology</td>
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</tr>
<tr>
<td>Michele Yang, MD</td>
<td>Senior Instructor of Pediatrics and Neurology</td>
<td>Research: Neuromuscular Disease</td>
</tr>
<tr>
<td>Audrey S. Yee, MD</td>
<td>Assistant Professor of Pediatrics</td>
<td>Research: Epilepsy</td>
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</table>
**Associated Faculty**

<table>
<thead>
<tr>
<th>Name</th>
<th>Clinical / Research Interests</th>
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<tbody>
<tr>
<td>Laura Fenton, MD</td>
<td>Neuroradiology</td>
</tr>
<tr>
<td>Associate Professor of Radiology</td>
<td></td>
</tr>
<tr>
<td>Nick Foreman, MD</td>
<td>Neuro- oncology</td>
</tr>
<tr>
<td>Assistant Professor of Pediatrics</td>
<td></td>
</tr>
<tr>
<td>Peter Baker, MD</td>
<td>Metabolic disease</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td></td>
</tr>
<tr>
<td>Bette Kleinschmidt-DeMasters, MD</td>
<td>Neuropathology</td>
</tr>
<tr>
<td>Professor of Pathology</td>
<td></td>
</tr>
<tr>
<td>Margarita Saenz, MD</td>
<td>Genetics</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td></td>
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<tr>
<td>Dennis Matthews, MD</td>
<td>Rehabilitation Service</td>
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<tr>
<td>Medical Director</td>
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<tr>
<td>Ann Reynolds, MD</td>
<td>Developmental Pediatrics</td>
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<tr>
<td>Assistant Professor of Pediatrics</td>
<td></td>
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<tr>
<td>Nick Stence, MD</td>
<td>Neuroradiology</td>
</tr>
<tr>
<td>Pediatric Neuroradiologist</td>
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</table>

**Program Curriculum**

**General Principles and Program Structure**

The program is set up to complete the length of training in child neurology as required by the American Board of Psychiatry and Neurology and the ACGME:

- One year must be adult clinical neurology
- One year must be clinical child neurology with a minimum of 4 months outpatient experience
- Participation in a Resident longitudinal/continuity clinic at least one half day weekly is required throughout the program.
- One year is referred to as “flexible” and the resident must learn “principles of neuropathology, neuroradiology, neuro-ophthalmology, psychiatry, rehabilitation, neurological surgery, neurodevelopment, and the basic sciences.

The curriculum is established to provide a framework to meet these goals. Patient care responsibilities are meant to ensure a balance between patient care and education that achieves for the trainee an optimal educational experience consistent with the best medical care. Patient care responsibilities include inpatient, outpatient, critical care and consultation experiences.

Teaching is provided by the program director and teaching staff. Teaching staff are certified by the ABPN with special qualification in child neurology and have diverse interests and skills to meet the broad needs to provide the breadth of teaching necessary. The teaching staff actively pursues scholarly activities in the neurosciences and encourages residents to do the same. An **Education Committee** comprised of the teaching staff and at least one of the child neurology residents regularly (bi-annually) reviews various aspects of the training program as well as materials in this manual.

There is always a designated member of the teaching staff available to assume the responsibilities of the day-to-day activities of the program. Clinical teaching rounds are at least 5 days per week. The teaching staff regularly discusses the program’s progress, effectiveness and use of resources at faculty meetings. Resident participation on an annual basis at these meetings is encouraged.

Other faculty available for teaching includes those with expertise in neuropsychology, child psychiatry, neuro-oncology, neuroradiology, neuropathology, neurosurgery, genetics, child development, epilepsy, movement disorders, critical care, neuro-ophthalmology, metabolic disease,
neuroimmunology, infectious diseases, neuromuscular diseases, rehabilitation, clinical neurophysiology, palliative care and pain management.

<table>
<thead>
<tr>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
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<tbody>
<tr>
<td><strong>PGY 3</strong></td>
<td><strong>PGY 4</strong></td>
<td><strong>PGY 5</strong></td>
</tr>
<tr>
<td>Per the adult neurology 1st year core. Typically:</td>
<td>4 months: Child Neurology ICU, inpatient &amp; emergency consult service:</td>
<td>3 months: Child Neurology ICU, inpatient &amp; emergency consult service.</td>
</tr>
<tr>
<td>6 months: Adult Neurology inpatient ward service at University Hospital, VA &amp; Denver Health Medical Center</td>
<td>3-4 months: Core Electives (neurophysiology, neuroradiology, neuro-oncology)</td>
<td>3-4 months: Electives (research, outpatient/inpatient clinical).</td>
</tr>
<tr>
<td>3 months: Adult Neurology outpatient clinical adult neurology at University Hospital, VA &amp; Denver Health Medical Center,</td>
<td>2 months: Rotating clinics (child neurology, genetics, rehabilitation, neuromuscular, development, psychiatry, metabolic disease)</td>
<td>1 month: Inpatient Psychiatry (3 weeks) &amp; COPIC- Risk Management (1 week).</td>
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<tr>
<td>3 months: Electives in subspecialty areas of neurology including Neurophysiology, Neuromuscular and Pathology</td>
<td>2-3 months: Elective (research, outpatient/inpatient clinical)</td>
<td>1-2 months: Core Electives (neuroradiology, neuro-oncology or pathology)</td>
</tr>
<tr>
<td>Continuity Clinic in Child Neurology at CHC; one-half day weekly, mandatory attendance</td>
<td>Continuity clinic in Child Neurology at CHC; one-half day weekly, mandatory attendance.</td>
<td>3 months: Rotating clinics (child neurology, genetics, rehabilitation, neuromuscular, development, psychiatry).</td>
</tr>
<tr>
<td>Continuity Clinic in Child Neurology at CHC; one-half day weekly, mandatory attendance</td>
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Above is structured to meet the Residency Review Committee (RRC) requirements. RRC requirements note:

1) “Training in child neurology shall encompass a total of 3 years. One year of training must be in clinical adult neurology with six months of inpatient service. One year of training shall be referred to as flexible, and the resident must learn the principles of neurophysiology, neuropathology, neuroradiology, neuro-ophthalmology, psychiatry, rehabilitation, neurological surgery, neurodevelopment, and the basic neurosciences. One year of training shall be in clinical child neurology.”

2) “In the program there must be a minimum of 12 months (full-time equivalent) of clinical child neurology with management responsibility for patient care. This must include at least 4 months (full-time equivalent) of outpatient experience in clinical child neurology. The outpatient experience also must include a resident longitudinal/continuity clinic with attendance by each resident at least one-half day weekly throughout the program.”

**Program Specifics for PGY 3-5:**
Continuity clinic will be attended weekly for ½ day throughout the 3 years of the program. This is mandatory. Certain program requirements are (partially) met through documented attendance at lectures. This includes basic science teaching, bioethics, palliative care, neuroradiology, neurosurgery, neuro-oncology, neuro-ophthalmology, psychiatry, neurodevelopment, rehabilitation, neuropsychology and neurophysiology.

In ACGME block diagram form:
**BLOCK ROTATIONS – Program Year 1 (PGY3)**

<table>
<thead>
<tr>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
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<tbody>
<tr>
<td>Adult Neurology INPT</td>
<td>Adult Neurology INPT</td>
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<td>Adult Neurology INPT</td>
<td>Adult Neurology INPT</td>
<td>Adult Neurology UCH subspecialty clinics</td>
<td>Adult Neurology UCH subspecialty clinics</td>
<td>Adult Neurology UCH subspecialty clinics</td>
<td>Blended Elective</td>
<td>Blended Elective</td>
<td>Blended Elective</td>
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</table>

**LONGITUDINAL EXPERIENCES - Program Year 1**

<table>
<thead>
<tr>
<th>Type Of Experience*</th>
<th>Weekly Structured</th>
<th>Number Of Weeks</th>
<th>Amount Of Time (FTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Neurology Continuity Clinic (CHC)</td>
<td>½ day each week</td>
<td>48 per year</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Program Specifics PG3:**

Details of the adult program are more closely detailed in the adult program training manual.

Specific knowledge base gained: Diagnosis and management of inpatient and outpatient emergent, acute and chronic neurological disorders in adults.

Specific techniques learned: Use of the history and physical examination to diagnose and treat inpatient and outpatient emergent, acute and chronic neurological disorders in adults.

Assessment of competence: Direct observation by faculty including final written assessment at the end of the rotation, as well as in-service examination.

During the adult year, residents will be trained on how to recognize and treat neurological disorders in adults. This training, supervised and detailed in the adult training manual, provides an opportunity to elicit by history and physical examination neuropathology in mature patients.

**BLOCK ROTATIONS - Program Year 2 (PGY4)**

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<tr>
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**LONGITUDINAL EXPERIENCES – Program Year 2**

<table>
<thead>
<tr>
<th>Type Of Experience*</th>
<th>Weekly Structured</th>
<th>Number Of Weeks</th>
<th>Amount Of Time (FTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Neurology Continuity Clinic (CHC)</td>
<td>½ day each week</td>
<td>48 per year</td>
<td>24</td>
</tr>
<tr>
<td>Psychiatry: Child Psychiatry clinic (CHC)</td>
<td>½ day each week during outpatient months</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Child Developmental Disorders and Behaviors clinic (CHC)</td>
<td>½ day each week during outpatient months</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Genetics clinic &amp; Metabolic (CHC)</td>
<td>½ day each week during outpatient months</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Rehabilitation/MDA clinic (CHC)</td>
<td>½ day each week during outpatient months</td>
<td>12</td>
<td>6</td>
</tr>
</tbody>
</table>
**Program Specifics PG4:**

The first 5 months of the training are dedicated to child neurology basic skills. One month is spent with the neuroradiology service, one month with the neuro-oncology service, two months with the neurophysiology service and one month on elective.

Electives are approved and discussed with the program director at least 1 month prior to the beginning of the final 6 months of training to ensure that an outline of the specific knowledge gained, techniques learned and assessment strategies are in place.
BLOCK ROTATIONS - Program Year 3 (PGY5)

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<tbody>
<tr>
<td>CHC Inpatient Service</td>
<td>CHC Outpatient Service</td>
<td>CHC Inpatient Service</td>
<td>CHC Outpatient Service</td>
<td>CHC Inpatient Service</td>
<td>CHC Outpatient Service</td>
<td>Inpatient Psychiatry/COPIC</td>
<td>CHC Neuro-radiology</td>
<td>CHC Neuro-pathology</td>
<td>Elective-Research or Community or Multi-specialty Clinics</td>
<td>Elective-Research or Community or Multi-specialty Clinics</td>
<td>Elective-Research or Community or Multi-specialty Clinics</td>
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LONGITUDINAL EXPERIENCES - Program Year 3

<table>
<thead>
<tr>
<th>Type Of Experience*</th>
<th>Weekly Structured</th>
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</thead>
<tbody>
<tr>
<td>Child Neurology Continuity Clinic (CHC)</td>
<td>½ day each week</td>
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<td>6</td>
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<td>Child Developmental Disorders and Behaviors clinic (CHC)</td>
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<td>Genetics clinic (CHC)</td>
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<td>6</td>
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<tr>
<td>Rehabilitation/MDA clinic (CHC)</td>
<td>½ day each week during outpatient months</td>
<td>12</td>
<td>6</td>
</tr>
</tbody>
</table>

Program Specifics PG5:

The first 6 months continue monthly alternation between the inpatient service (3 months) and the outpatient rotating clinic schedule (3 months) with increasing responsibility for patient management (see PG4). The second 6 months of the training are dedicated to child neurology electives and core electives. These can include basic or clinical science research training epilepsy, neuromuscular, genetics, neurovascular/stroke, physical medicine, epidemiology, neuro-immunology, neuro-ophthalmology, neurosurgery, neuroradiology, neuro-oncology, neuropsychology and neurodevelopment. One month of the 6 months of elective rotation will also include a 3 week rotation on the Inpatient Child Psychiatry Unit and one week of risk management experience.

Electives are approved and discussed with the program director at least 1 month prior to the beginning of the final 6 months of training to ensure that an outline of the specific knowledge gained, techniques learned and assessment strategies are in place.

Specific knowledge gained, techniques learned and assessment will depend on each rotation and will be determined prior to each rotation. Typically, assessment will be undertaken by the use of a written evaluation performed by the faculty person primarily involved in mentoring the resident for the rotation; clinical rotations will assess the 6 core ACGME competencies in regard to the specific rotation.
General Goals and Objectives for Rotations in Pediatric Neurology

**Neuropathology rotation**

**Specific knowledge base gained:** Criteria for pathology-based diagnosis of diseases relevant to child neurology.

**Specific techniques learned:** An understanding of the different histological techniques used to make diagnosis of diseases relevant to child neurology.

**Assessment of competence:** Direct observation by faculty including final written assessment at the end of the rotation.

*This is to be accomplished by concentrated time with the neuropathology and neuro-oncology services. This will include gross observations during brain cuttings and autopsies and associated conferences as well as microscopic observations during “sign-out” of frozen and fixed specimens.*

**Rotation objectives:**

1. **Medical Knowledge**
   a. Acquisition and demonstration of the skills required to interpret neuropathology specimens, using gross inspection and microscopic techniques.
   b. Acquisition and demonstration of the ability to correlate pathologic findings with clinical symptoms.
   c. Synthesis of such information to arrive at hypotheses and conclusions with respect to the pathogenesis of neurological and neurodevelopmental disorders.
   d. Development of criteria for ordering an autopsy on a patient or for ordering a biopsy on a patient.
   e. Creation of an individual, systematic process for review of neuroanatomy and neuropathology for neurology board preparation using existing resources and independent study.
   f. Understand basic and unusual types of vascular disease.
   g. Know common infections that affect the CNS, including the morphological appearance of the organisms.
   h. Understand basic and latest updates on demyelinating diseases of the CNS, especially Multiple Sclerosis and Neuromyelitis Optica.
   i. Understand basic features of toxic metabolic disease that affects the CNS.
   j. Know grading system and biological behavior of common tumors that affect the CNS/PNS.
   k. Understand the principles of muscle, nerve and neurodegenerative diseases including mode of inheritance where applicable.
   l. Read Prayson Textbook of Neuropathology.

2. **Patient Care Skills**
   a. Acquisition and demonstration of the ability to correlate pathologic findings with clinical symptoms.
   b. Synthesis.
   c. of such information to arrive at hypotheses and conclusions with respect to the pathogenesis of neurological and neurodevelopmental disorders.
   d. Development of criteria for ordering an autopsy on a patient or for ordering a biopsy on a patient. Creation of an individual, systematic process for review of neuroanatomy and neuropathology for neurology board preparation using existing resources and independent study.

3. **Interpersonal and Communication Skills**
a. Development of criteria for ordering an autopsy on a patient or for ordering a biopsy on a patient.

4. Professionalism

   a. Development of criteria for ordering an autopsy on a patient or for ordering a biopsy on a patient
   b. Attendance at all autopsies lectures and demonstrations during the rotation

5. Systems-Based Practice

   a. Recognize the factors involved in to insure quality control and of pathology specimens and autopsy material

6. Practice-Based Learning and Improvement

   a. Acquisition and demonstration of the ability to correlate pathologic findings with clinical symptoms
   b. Development of criteria for ordering an autopsy on a patient or for ordering a biopsy on a patient
   c. Creation of an individual, systematic process for review of neuroanatomy and neuropathology for neurology board preparation using existing resources and independent study

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**Neuroradiology rotation**

**Specific knowledge base gained:** Criteria for radiology-based diagnosis of diseases relevant to child neurology.

**Specific techniques learned:** An understanding of the different radiological techniques used to make diagnosis of diseases relevant to child neurology.

**Assessment of competence:** Direct observation by faculty including final written assessment at the end of the rotation.

*This is to be accomplished by concentrated time with the neuroradiology services. This will include shadowing a neuroradiologist during their rounds and participation in associated weekly conferences. Modalities to be observed include ultrasound, plain radiography, computerized tomography, MRI, SPECT and various modalities and arteriography.*

**Rotation Objectives:**

The pediatric neurology resident should gain exposure to the following topics both by review of films, review of teaching files and independent reading. The normal developmental changes seen radiographically in a developing child, pediatric congenital malformations of the brain and spinal cord, diseases of the white matter, pediatric strokes, encephalitis, post infectious encephalitis, pediatric brain tumors.

1. **Medical Knowledge**

   a. Acquisition of additional exposure to the organized evaluation and interpretation of neuroimaging studies of the brain and spinal cord including CT, MRI, MR angiography, conventional angiography, and brain ultrasound
   b. Acquisition of knowledge of neuroanatomy and vascular anatomy of the brain and spine as it relates to neuroimaging
   c. Acquisition of basic understanding of neuroimaging technology
   d. Exposure to the procedural aspects of neuroimaging
   e. Attendance at neuroradiology reading rounds with the pediatric neuroradiologist at
least 2 days a week and adult neuroradiology 2 days a week
f. Development of criteria for ordering neuroimaging studies
g. Organization of a self-review of neuroanatomy, using reference texts and teaching files
h. Attendance and observation of at least one case each of myelography and conventional cerebral angiography in the adult, as well as attend and observe at least one case each of neonatal head ultrasound, and MRI/MRA brain with sedation in a child.
i. Criteria for radiology based diagnosis of diseases relevant to child neurology.

2. Patient Care Skills
a. Acquisition of additional exposure to the organized evaluation and interpretation of neuroimaging studies of the brain and spinal cord including CT, MRI, MR angiography, conventional angiography, and brain ultrasound
b. Acquisition of knowledge re: neuroanatomy and vascular anatomy of the brain and spine as it relates to neuroimaging
c. Acquisition of basic understanding of neuroimaging technology
d. Exposure to the procedural aspects of neuroimaging
e. Attendance at neuroradiology reading rounds with the pediatric neuroradiologist at least 2 days a week and adult neuroradiology 2 days a week
f. Development of criteria for ordering neuroimaging studies
g. Organization of a self-review of neuroanatomy, using reference texts and teaching files
h. Attendance and observation of at least one case each of myelography and conventional cerebral angiography in the adult, as well as attend and observe at least one case each of neonatal head ultrasound, and MRI/MRA brain with sedation in a child.

3. Interpersonal and Communication Skills
a. Attendance at neuroradiology reading rounds with the pediatric neuroradiologist at least 2 days a week and adult neuroradiology 2 days a week
b. Development of criteria for ordering neuroimaging studies

4. Professionalism
a. Attendance at neuroradiology reading rounds with the pediatric neuroradiologist at least 2 days a week and adult neuroradiology 2 days a week
b. Development of criteria for ordering neuroimaging

5. Systems-Based Practice
a. Be able to provide criteria for selection of neuroimaging for pediatric appropriate patients to neurology team and other services
b. Provide interpretation of neuroimaging studies to the neurology team and other services

6. Practice-Based Learning and Improvement
a. Organization of a self-review of neuroanatomy, using reference texts and teaching files
b. Provide interpretation of neuroimaging studies to the neurology team and other services

| Neurophysiology rotation |
Specific knowledge base gained: Criteria for electrophysiology-based diagnosis of diseases relevant to child neurology.

Specific techniques learned: An understanding of the different electrophysiological techniques used to make diagnosis of diseases relevant to child neurology.

Assessment of competence: Direct observation by faculty including final written assessment at the end of the rotation.

This will be done by concentrated time with the epilepsy service. This will include patient care of children admitted to the epilepsy service for monitoring and surgery. EEG basics and readings will be supervised by child neurology staff. EMG and NCS basics and readings will be supervised by child neurology and physical medicine staff.

Rotation objectives:
1. Medical Knowledge
   a. Differentiating between normal and abnormal EEG waveforms for children and for neonates
   b. Benign variants seen in children as well as posterior dominant rhythm
   c. Understanding some of the common waveforms seen in neonates (i.e. delta brushes, negative sharp transients, positive sharp transients). Understand what is the difference between neonatal recording and regular childhood recording.
   d. What a seizure pattern looks like and whether a seizure is partial or generalized
   e. What the background looks like in a benign childhood epilepsy (meaning: normal background in between spikes, the 3Hz spike and wave pattern, Rolandic spikes)
   f. What the background looks like in an encephalopathic patient and the different patterns seen (i.e. burst suppression, invariance, OIRDA, triphasic waves, PLEDs)
   g. The benefits and disadvantages of videoelectroencephalography, ambulatory EEG and continuous ICU monitoring
   h. Differentiating artifact in a recording
   i. The differences in montages, paper speed, sensitivity, and the basic technical aspects of EEG such as the International 10-20 system
   j. Use of activation in children
   k. What is normal sleep and what is electrical status epilepticus of sleep
   l. What is an electrocerebral silence recording
   m. When a patient is an epilepsy surgery candidate and when a patient needs functional mapping, ECoG versus subdural grids, etc
   n. What is a Wada examination and why is it used?
   o. Other modalities for epilepsy treatment: ketogenic diet, vagal nerve stimulation and when to use them

2. Patient Care Skills
   a. Describing what an EEG report means
   b. How to interpret a normal EEG
   c. Taking a history and physical for an epilepsy patient in clinic
   d. When to use Ketogenic diet and vagal nerve stimulator
   e. Determining from the history and physical if a patient has focal or partial seizures
   f. Determining which medication choices may benefit a patient

3. Interpersonal and Communication Skills
   a. Describing an EEG report to a physician and inpatient service group
   b. Explaining to a technician why a patient needs to be hooked up for EEG
   c. Explaining to the attending epileptologist what one is seeing on a background
4. **Professionalism**
   a. The rapport a resident has with a patient and if this is appropriate
   b. The rapport with the attending epileptologist and with the EEG technicians
   c. The rapport and way a resident discusses the results of an EEG with the inpatient team
   d. Whether the resident is on time and completes his work appropriately

5. **Systems-Based Practice**
   a. How the resident is able to interpret and explain to the referring inpatient team the results of the telemetry and EEG
   b. How the resident is able to use the MRI scans and functional neuroimaging scans for the patient
   c. If the resident knows what referral is appropriate for neuropsychology and other services

6. **Practice-Based Learning and Improvement**
   a. If the resident is able to understand what is being explained to him in didactic lectures, reading and observing waveforms during rounds and is able to improve his interpretation technique and dictation on EEG reading
   b. If the resident is able to understand what is being explained to him in didactic lectures, reading and able to translate that to improved patient care in terms of coming up with a differential diagnosis and better treatment plan in epilepsy clinic

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**Neuro-oncology rotation**

**Assessment of competence:** Direct observation by faculty including final written assessment at the end of the rotation.

**Rotation objectives:**

1. **Medical Knowledge**
   a. Acquisition of experience in the diagnosis and management of the following disorders: cerebellar medulloblastoma, cerebellar and cerebral astrocytoma, spinal cord tumors—intramedullary, intradural, and extradural, neurofibromas, dysembryonic neuroectodermal tumors, gangliogliomas and other tumors of the central and peripheral nervous system.
   b. Familiarity with the national protocols used to treatment central nervous system tumors in children.
   c. Familiarity with many of the chemotherapeutic agents—their indications and potential side effects.

2. **Patient Care Skills**
   a. Acquisition and mastery of the neurologic history and exam in children with tumors of the central and peripheral nervous systems
   b. Development of a clinical approach to localization and differential diagnosis of childhood neoplasms

3. **Interpersonal and Communication Skills**
   a. Communicate effectively with oncology patients and parents using verbal, non-verbal and writing skills
   b. Transmit information to patients in a clear, meaningful fashion
   c. Work effectively with the neurology care team

4. **Professionalism**
   a. Use medical records effectively to document course of illness and treatment
   b. Demonstrate Ethical behavior and integrity, honesty and compassion

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c. Demonstrate appreciating end of life issues and end of life care

5. Systems-Based Practice
   a. Utilize appropriate consultation and referral for optimal management of oncology patients
   b. Demonstrate accurate cross coverage and documentation of accurate medical data in communications and management of oncology patients
   c. Demonstrate knowledge of community systems and support services such as rehabilitation, hospice, palliative care and skilled care

6. Practice-Based Learning and Improvement
   a. Demonstrate appropriate skills with regard to literature databases, drug information databases
   b. Active Participation in conferences, patient care conferences, tumor board, and any other organized educational activities during oncology rotation
   c. Familiarity with treatment and study trial protocols for oncology patients

| Outpatient Clinic rotation (Subspecialties) |

During months on the rotating outpatient clinic schedule, a weekly schedule (subject to timing but not content changes) is as follows:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM Child Psychiatry</td>
<td>Continuity Clinic</td>
<td>Neurology</td>
<td>Metabolic Clinic</td>
<td>Neuromuscular</td>
</tr>
<tr>
<td>clinic/consult</td>
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<tr>
<td>PM Genetics and Neurology</td>
<td>Developmental Disorders and Behavior clinic</td>
<td>Didactic afternoon</td>
<td>Continuity Clinic</td>
<td>Neuromuscular</td>
</tr>
</tbody>
</table>

PGY - 4 Rotation Objectives:

1. Medical Knowledge
   a. Acquisition and demonstration of the medical, organizational, and communication skills necessary to provide longitudinal care to neurological/neurodevelopmental disabilities in patients
   b. Acquisition and demonstration of the medical, organizational and communication skills necessary to provide longitudinal service and education to referring primary care physicians, therapists, teachers and educational aides, school nurses, and social workers
   c. Establishment of oneself as the primary neurologist (under supervision) for a group of pediatric patients with neurological disorders and/or neurodevelopmental disabilities

2. Patient Care Skills
   a. Acquisition and demonstration of the medical, organizational, and communication skills necessary to provide longitudinal care to neurological/neurodevelopmental disabilities in patients including: Collection of medical information by history and examination; localization of the lesion/clinical problem; generation of a differential diagnosis and plan of investigation and treatment; appropriate selection and skillful performance of required technical skills treatment of patients and families with respect and empathy
   b. Acquisition and demonstration of the medical, organizational and communication skills necessary to provide longitudinal service and education to referring primary care physicians, therapists, teachers and educational aides, school nurses, and social workers
c. Establishment of oneself as the primary neurologist (under supervision) for a group of pediatric patients with neurological disorders and/or neurodevelopmental disabilities

3. **Interpersonal and Communication Skills**
   a. Acquisition and demonstration of the medical, organizational, and communication skills necessary to provide longitudinal care to neurological/neurodevelopmental disabilities in patients including:
   b. Successful communication with patients and families in the face of cultural, educational, language or emotional barriers
   c. Clear, correct presentation of spoken or written medical material to patients, families, the community, students, colleagues
   d. Ability to communicate with consultants in a timely and appropriate manner
   e. Continued development of the communication skills necessary in order to effectively communicate to families and other health care providers in the team about the patient’s medical condition, the necessary diagnostic tests, and management plan. These communication skills include excellent listening skills, ability to establish rapport with patient and family, ability to explain medical terms in a simplified manner, culturally sensitive care.

4. **Professionalism**
   a. Establishment of oneself as the primary neurologist (under supervision) for a group of pediatric patients with neurological disorders and/or neurodevelopmental disabilities including:
   b. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
   c. Further experience teaching of medical students and service rotators in the adult rotations, and to further hone the skills of team management with an expanded role in the supervision and teaching

5. **Systems-Based Practice**
   a. Acquisition and demonstration of increasing independence in the medical, organizational, and communication skills necessary to provide longitudinal care to neurological/neurodevelopmental disabilities in patients including:
   b. Understanding the cost of most diagnostic tests and medication in order to consider cost: benefit ratio and other economic factors (such as insurance) in patient management decisions
   c. Successful use of multidisciplinary case management to deliver medical care— including the primary care provider, other physicians, nurses, social workers, child protective services, physical therapists, occupational therapists, speech therapists, community liaisons, and others in the health care team
   d. Successful and timely completion of documentation to minimize inefficiency and poor communication
   e. Understanding of the criteria for referring to subspecialist and how to interact with these providers
   f. Understanding of current community and national health care issues
   g. Integration into systems-based practice through the care team models in clinic involving allied health professionals

6. **Practice-Based Learning and Improvement**
   a. Acquisition and demonstration of the medical, organizational and communication skills necessary to provide longitudinal service and education to referring primary care physicians, therapists, teachers and educational aides, school nurses, and social
b. Establishment of oneself as the primary neurologist (under supervision) for a group of pediatric patients with neurological disorders and/or neurodevelopmental disabilities.

PGY – 5 Rotation Objectives:

1. Medical Knowledge
   a. Acquisition and demonstration of increasing independence in the medical, organizational, and communication skills necessary to provide longitudinal care to neurological and neurodevelopmental disabilities in patients
   b. Acquisition and demonstration of increasing independence in the medical, organizational and communication skills necessary to provide longitudinal service and education to referring primary care physicians, therapists, teachers and educational aides, school nurses, and social workers
   c. Establishment of oneself as the primary neurologist (under supervision) for a group of pediatric patients with neurological disorders and/or neurodevelopmental disabilities

2. Patient Care Skills
   a. Acquisition and demonstration of the medical, organizational, and communication skills necessary to provide longitudinal care to neurological/ neurodevelopmental disabilities in patients including:
   b. Collection of medical information by history and examination; localization of the lesion/clinical problem; generation of a differential diagnosis and plan of investigation and treatment; appropriate selection and skilful performance of required technical skills; treatment of patients and families with respect and empathy
   c. Acquisition and demonstration of the medical, organizational and communication skills necessary to provide longitudinal service and education to referring primary care physicians, therapists, teachers and educational aides, school nurses, and social workers
   d. Establishment of oneself as the primary neurologist (under supervision) for a group of pediatric patients with neurological disorders and/or neurodevelopmental disabilities

3. Interpersonal and Communication Skills
   a. Acquisition and demonstration of increasing independence in the medical, organizational, and communication skills necessary to provide longitudinal care to neurological/ neurodevelopmental disabilities in patients including:
   b. Successful communication with patients and families in the face of cultural, educational, language or emotional barriers
   c. Clear, correct presentation of spoken or written medical material to patients, families, the community, students, colleagues
   d. Ability to communicate with consultants in a timely and appropriate manner
   e. Mastery of the communication skills necessary in order to effectively communicate to families and other health care providers in the team about the patient’s medical condition, the necessary diagnostic tests, and management plan. These communication skills include excellent listening skills, ability to establish rapport with patient and family, ability to explain medical terms in a simplified manner, culturally sensitive care)

4. Professionalism
   a. Establishment of oneself as the primary neurologist (under supervision) for a group of pediatric patients with neurological disorders and/or neurodevelopmental disabilities
disabilities including mastery of the following:

b. The skills required to function as the leader of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting

c. The skills required to be the leader of the teaching of medical students and service rotators in the adult rotations, and to further hone the skills of team management with an expanded role in the supervision and teaching

5. **Systems-Based Practice**

a. Acquisition and demonstration of increasing independence in the medical, organizational, and communication skills necessary to provide longitudinal care to neurological/neurodevelopmental disabilities in patients including:

b. Understanding the cost of most diagnostic tests and medication in order to consider cost-benefit ratio and other economic factors (such as insurance) in patient management decisions

c. Successful use of multidisciplinary case management to deliver medical care—including other physicians, nurses, social workers, child protective services, physical therapists, occupational therapists, speech therapists, community liaisons, and others in the health care team

d. Successful completion of documentation to minimize inefficiency and poor communication

e. Understanding of the criteria for referring to subspecialist and how to interact with these providers

f. Understanding of current community and national health care issues

g. Full integration into systems-based practice through the care team models in clinic involving allied health professionals

6. **Practice-Based Learning and Improvement**

a. Acquisition and demonstration of increasing independence in the medical, organizational and communication skills necessary to provide longitudinal service and education to referring primary care physicians, therapists, teachers and educational aides, school nurses, and social workers

b. Establishment of oneself as the primary neurologist (under supervision) for a group of pediatric patients with neurological disorders and/or neurodevelopmental disabilities

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<th><strong>Genetics and Metabolic clinic</strong></th>
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**Specific knowledge base gained:** Knowledge of metabolic and inherited basis of diseases relevant to child neurology and the basic aspects of genetic counseling of inherited diseases.

**Specific techniques learned:** Utilization of the latest molecular modalities available for diagnosis of diseases relevant to child neurology, obtaining genetic history, genetic counseling.

**Assessment of competence:** Direct observation by faculty including final written assessment at the end of the rotation.

Genetics clinics include participation in the Inherited Metabolic Disease and Neurocutaneous clinics. Supervision is by Genetics and Metabolic staff. Residents are to participate as genetic fellows in this discipline and are responsible for seeing new outpatient consultations as well as follow-up visits.

**REQUIRED:** Please refer to Appendix 6 for the clinic check list and forms required for this rotation.
Rotation objectives:

1. Medical Knowledge
   a. Acquisition and demonstration of the skills required to obtain and record a basic family/genetic history
   b. Acquisition and demonstration of the skills to perform a basic dysmorphology examination
   c. Acquisition and demonstration of the skills required to recognize the following clinical presentations of inborn errors of metabolism and be able to initiate investigation, diagnosis, and consultation where indicated, always providing efficient, culturally competent, cost-effective care: chronic encephalopathy, progressive myoclonic epilepsy, movement disorder, myopathy/muscle weakness, stroke, psychiatric problems, hypoglycemia, lactic acidosis, hyperammonemia, cyclic vomiting and neonatal acute encephalopathy
   d. Acquisition and demonstration of the skills to recognize the signs and symptoms of the following disorders, initiate appropriate investigational studies needed to confirm the diagnosis, and institute appropriate management therapies: amino acidopathies; organic acidemias; mitochondrial disorders; neurotransmitter disorders; urea cycle disorders; peroxisomal disorders; lysosomal storage disorders; defects in fatty acid metabolism; vitamin deficiencies (including Vitamin B12, folate, and pyridoxine); pyridoxine dependency; mucopolysaccharidoses; defects in copper metabolism; porphyria. Again, the resident will always demonstrate effective, cost-efficient, and culturally competent care.
   e. Acquisition and demonstration of the skills required to recognize the signs and symptoms of following chromosomal/genetic syndromes and to be able to initiate the appropriate diagnostic studies to confirm the diagnosis: Trisomy 21 syndrome; Fragile X syndrome; Angelman’s syndrome; Rett’s syndrome; William’s syndrome; Smith-Lemli-Opitz syndrome; and other chromosomal/genetic syndromes. The resident should know the available management strategies for each syndrome, their mode of inheritance, and how to counsel families re: inheritance and prognosis.
   f. Acquisition and demonstration of the knowledge and skills required to diagnose and manage the neurocutaneous disorders, especially tuberous sclerosis and neurofibromatosis—signs and symptoms of the disorders; investigative studies; diagnostic criteria; complications of the disorders; management strategies; inheritance pattern; prognosis.
   g. Acquisition and demonstration of the skills required to utilize the genetics databases available on the internet
   h. Acquisition and demonstration of a basic knowledge in the principles of molecular genetics and how it can be applied to the clinical practice of pediatric neurology

2. Patient Care Skills
   a. Acquisition and demonstration of the skills required to obtain and record a basic family/genetic history
   b. Acquisition and demonstration of the skills to perform a basic dysmorphology examination
   c. Acquisition and demonstration of the skills required to recognize the following clinical presentations of inborn errors of metabolism and be able to initiate investigation, diagnosis, and consultation where indicated, always providing efficient, culturally competent, cost-effective care: chronic encephalopathy, progressive myoclonic epilepsy, movement disorder, myopathy/muscle weakness, stroke, psychiatric problems, hypoglycemia, lactic acidosis, hyperammonemia, cyclic vomiting and neonatal acute encephalopathy.
   d. Acquisition and demonstration of the skills to recognize the signs and symptoms of the following disorders, initiate appropriate investigational studies needed to confirm the diagnosis, and institute appropriate management therapies:
amino acidopathies  organic acidemias
mitochondrial disorders  neurotransmitter disorders
urea cycle disorders  peroxisomal disorders
lysosomal storage disorders  defects in fatty acid metabolism
porphyria  pyridoxine dependency
defects in copper metabolism  mucopolysaccharidoses
vitamin deficiencies (including Vitamin B12, folate, and pyridoxine)

Again, the resident will always demonstrate effective, cost-efficient, and culturally competent care.

e. Acquisition and demonstration of the skills required to recognize the signs and symptoms of following chromosomal/genetic syndromes and to be able to initiate the appropriate diagnostic studies to confirm the diagnosis:
   Trisomy 21 syndrome; Fragile X syndrome; Angelman’s syndrome; Rett’s syndrome; William’s syndrome; Smith-Lemli-Opitz syndrome; and other chromosomal/genetic syndromes. The resident should know the available management strategies for each syndrome, their mode of inheritance, and how to counsel families re: inheritance and prognosis.

f. Acquisition and demonstration of the knowledge and skills required to diagnose and manage the neurocutaneous disorders, especially tuberous sclerosis and neurofibromatosis—signs and symptoms of the disorders; investigative studies; diagnostic criteria; complications of the disorders; management strategies; inheritance pattern; prognosis.

g. Acquisition and demonstration of the skills required to utilize the genetics databases available on the internet.

h. Acquisition and demonstration of a basic knowledge in the principles of molecular genetics and how it can be applied to the clinical practice of pediatric neurology.

3. **Interpersonal and Communication Skills**
   a. Acquisition and demonstration of the skills required to obtain and record a basic family/genetic history.
   b. Demonstrate complete and timely written documentation.
   c. Acquisition and demonstration of the skills required to recognize the following clinical presentations of inborn errors of metabolism and be able to initiate investigation, diagnosis, and consultation where indicated, always providing efficient, culturally competent, cost-effective care: chronic encephalopathy, progressive myoclonic epilepsy, movement disorder, myopathy/muscle weakness, stroke, psychiatric problems, hypoglycemia, lactic acidosis, hyperammonemia, cyclic vomiting, and neonatal acute encephalopathy.
   d. Acquisition and demonstration of the skills to recognize the signs and symptoms of the following disorders, initiate appropriate investigational studies needed to confirm the diagnosis, and institute appropriate management therapies: amino acidopathies; organic acidemias; mitochondrial disorders; neurotransmitter disorders; urea cycle disorders; peroxisomal disorders; lysosomal storage disorders; defects in fatty acid metabolism; vitamin deficiencies (including Vitamin B12, folate, and pyridoxine); pyridoxine dependency; mucopolysaccharidoses; defects in copper metabolism; porphyria. Again, the resident will always demonstrate effective, cost-efficient, and culturally competent care.
   e. Acquisition and demonstration of the skills required to recognize the signs and symptoms of following chromosomal/genetic syndromes and to be able to initiate the appropriate diagnostic studies to confirm the diagnosis: Trisomy 21 syndrome; Fragile X syndrome; Angelman’s syndrome; Rett’s syndrome; William’s syndrome; Smith-Lemli-Opitz syndrome; and other chromosomal/genetic syndromes. The resident should know the available management strategies for each syndrome, their mode of inheritance, and how to counsel families re: inheritance and prognosis.
f. Acquisition and demonstration of the knowledge and skills required to diagnose and manage the neurocutaneous disorders, especially tuberous sclerosis and neurofibromatosis—signs and symptoms of the disorders; investigative studies; diagnostic criteria; complications of the disorders; management strategies; inheritance pattern; prognosis.

4. Professionalism
   a. Establish oneself as the primary neurologist (under supervision) for a group of pediatric patients with inborn errors of metabolism, genetic disorders and neurocutaneous syndromes

5. Systems-Based Practice
   a. Acquisition and demonstration of the skills required to recognize the following clinical presentations of inborn errors of metabolism and be able to initiate investigation, diagnosis, and consultation where indicated, always providing efficient, culturally competent, cost-effective care: chronic encephalopathy, progressive myoclonic epilepsy, movement disorder, myopathy/muscle weakness, stroke, psychiatric problems, hypoglycemia, lactic acidosis, hyperammonemia, cyclic vomiting, and neonatal acute encephalopathy.
   b. Acquisition and demonstration of the skills to recognize the signs and symptoms of the following disorders, initiate appropriate investigational studies needed to confirm the diagnosis, and institute appropriate management therapies: amino acidopathies; organic acidemias; mitochondrial disorders; neurotransmitter disorders; urea cycle disorders; peroxisomal disorders; lysosomal storage disorders; defects in fatty acid metabolism; vitamin deficiencies (including Vitamin B12, folate, and pyridoxine); pyridoxine dependency; mucopolysaccharidoses; defects in copper metabolism; porphyria. The resident will always demonstrate effective, cost-efficient, and culturally competent care.
   c. Acquisition and demonstration of the knowledge and skills required to diagnose and manage the neurocutaneous disorders, especially tuberous sclerosis and neurofibromatosis—signs and symptoms of the disorders; investigative studies; diagnostic criteria; complications of the disorders; management strategies; inheritance pattern; prognosis.

6. Practice-Based Learning and Improvement
   a. Acquisition and demonstration of the skills required to recognize the following clinical presentations of inborn errors of metabolism and be able to initiate investigation, diagnosis, and consultation where indicated, always providing efficient, culturally competent, cost-effective care: chronic encephalopathy, progressive myoclonic epilepsy, movement disorder, myopathy/muscle weakness, stroke, psychiatric problems, hypoglycemia, lactic acidosis, hyperammonemia, cyclic vomiting, and neonatal acute encephalopathy.
   b. Acquisition and demonstration of the skills to recognize the signs and symptoms of the following disorders, initiate appropriate investigational studies needed to confirm the diagnosis, and institute appropriate management therapies: amino acidopathies; organic acidemias; mitochondrial disorders; neurotransmitter disorders; urea cycle disorders; peroxisomal disorders; lysosomal storage disorders; defects in fatty acid metabolism; vitamin deficiencies (including Vitamin B12, folate, and pyridoxine); pyridoxine dependency; mucopolysaccharidoses; defects in copper metabolism; porphyria. Again, the resident will always demonstrate effective, cost-efficient, and culturally competent care.
   c. Acquisition and demonstration of the skills required to recognize the signs and symptoms of the following chromosomal/genetic syndromes and to be able to initiate the appropriate diagnostic studies to confirm the diagnosis: Trisomy 21 syndrome;
Fragile X syndrome; Angelman’s syndrome; Rett’s syndrome; William’s syndrome; Smith-Lemli-Opitz syndrome; and other chromosomal/genetic syndromes. The resident should know the available management strategies for each syndrome, their mode of inheritance, and how to counsel families re: inheritance and prognosis.

d. Acquisition and demonstration of the knowledge and skills required to diagnose and manage the neurocutaneous disorders, especially tuberous sclerosis and neurofibromatosis—signs and symptoms of the disorders; investigative studies; diagnostic criteria; complications of the disorders; management strategies; inheritance pattern; prognosis.

e. Acquisition and demonstration of the skills required to utilize the genetics databases available on the internet

f. Acquisition and demonstration of a basic knowledge in the principles of molecular genetics and how it can be applied to the clinical practice of pediatric neurology

**Psychiatry clinic**

**Specific knowledge base gained:** Knowledge of psychiatric diseases relevant to child neurology and the ability to recognize and manage psychiatric disorders that may have neurological manifestations and vice versa. Specifically, residents should also become familiar with the principles and practice of psychopharmacology.

**Specific techniques learned:** Obtaining psychiatric history.

**Assessment of competence:** Direct observation by faculty including final written assessment at the end of the rotation.

Psychiatry clinics include general child psychiatry clinics and psychopharmacology clinics. The psychiatric liaison service provides inpatient psychiatric consultations. Supervision is by Psychiatry faculty. Residents are to participate as psychiatry fellows in this discipline and are responsible for seeing new consultations as well as follow-up visits.

**Rotation objectives:**

1. **Medical Knowledge**
   a. Knowledge of psychiatric diseases relevant to child neurology
   b. Ability to recognize and manage psychiatric disorders that have neurologic manifestations
   c. Become familiar with the principles and practice of psychopharmacology

2. **Patient Care Skills**
   a. Perform an appropriate psychiatric history on inpatients as well as outpatient consults
   b. Perform an appropriate psychiatric exam including mental status exam
   c. Understand parameters for chemical and physical restraints

3. **Interpersonal and Communication Skills**
   a. Demonstrate oral and written communication skills enabling establishment and maintenance of effective professional relationships with patients, families, and other members of the healthcare team
   b. Demonstrate skills to discuss sensitive issues in an effective, compassionate manner
   c. Perform complete and focused case presentations that are accurate and well organized.
   d. Prepare and maintain accurate medical records

4. **Professionalism**
a. Display integrity, honesty and appropriate boundaries with patients, families and other professionals  
b. Recognized the limits of one’s knowledge and skills  
c. Protect patient privacy in discussions, medical records and professional interactions

5. Systems-Based Practice  
a. Prioritize patient problems  
b. Develop cost-effective diagnostic plans  
c. Develop evidence based plan for treatment  
d. Understand the roles and responsibilities of all members of the psychiatric team

6. Practice-Based Learning and Improvement  
a. Incorporate evidence based medicine into diagnostic work up and treatment plan  
b. Locate, evaluate, and incorporate information for problem solving and decision making relevant to the patients cared for  
c. Effectively transmit medical knowledge to medical staff

Development clinic

Specific knowledge base gained: Knowledge of developmental and psychiatric diseases relevant to child neurology and the ability to recognize and manage developmental disorders that may have neurological manifestations and vice versa. Specifically, residents should also become familiar with the principles and practice of psychopharmacology as it pertains to developmental disorders.

Specific techniques learned: Basic understanding of instruments used for neuropsychiatric and neuro-educational testing; obtaining developmental and behavioral history.

Assessment of competence: Direct observation by Developmental and Behavior faculty including final written assessment at the end of the rotation.

Development clinics are to focus on neurodevelopmental disabilities. Supervision is by Developmental Pediatrics staff. Residents are to participate as development fellows in this discipline and are responsible for seeing new consultations as well as follow-up visits.

Neurology clinics (General Epilepsy and Neuromuscular)

Specific knowledge base gained: Knowledge of the broad spectrum of child neurological disorders seen in the outpatient setting. This includes history taking, physical examination, usage and evaluation of testing modalities, use of anticonvulsants and other medicines including those used for migraine, communication of results and treatment plans, counseling, accessing therapy and other modalities in the health-care system and interaction with schools and educational counselors.

Specific techniques learned: Elements of obtaining the history and physical exam. Assessment of competence: Direct observation by faculty including final written assessment at the end of the rotation.

Neurology clinics are general child neurology clinics. Epilepsy clinic and neuromuscular (NM) clinic are sub-specialty child neurology clinics. Supervision is by Child Neurology staff and jointly by Child Neurology, Physical Medicine and Genetics staff in the NM clinic. Residents are responsible for seeing new outpatient consultations as well as follow-up visits. NM clinic is essential to provide residents with the necessary exposure to the physical medicine service. The goals and objectives of the muscle clinic are to learn to recognize and manage neuromuscular disorders. The goals and objectives of the epilepsy clinic are to learn to recognize and manage epileptic disorders. Residents are to become familiar with the pharmacological profiles of all anticonvulsant medications.
Residents are to become familiar with alternatives to anticonvulsant medications and how these are managed, including the ketogenic diet, vagal nerve stimulator and epilepsy surgery.

### Inpatient Consult Service

**Specific knowledge base gained:** Knowledge of the broad spectrum of child neurological disorders seen in the inpatient setting, especially management of neurological emergencies and patients in the intensive care unit. This includes history taking, physical examination, evaluation and use of testing modalities, use of anticonvulsants and other medicines including those used for migraine, communication of results and treatment plans, counseling, accessing therapy and other modalities in the health-care system and interaction with schools and educational counselors.

**Specific techniques learned:** patient history, physical and neurologic exam, diagnosis and management of pediatric neurologic disease.

**Assessment of competence:** Direct observation by faculty including final written assessment at the end of the rotation.

The pediatric neurology resident will learn from involvement in patient care, independent reading, case presentations and attending teaching that occurs during daily work rounds as well as didactic teaching sessions held 2 to 3 times a week.

### PGY-4 Rotation objectives:

1. **Medical Knowledge** (topics to be covered – must cover and assess)
   a. Acquisition and mastering of the neurologic history and examination in children
   b. Increased clinical experience in the management of acute neurologic problems in children in the hospital setting
   c. Further development of a clinical approach to localization and differential diagnosis of neurologic disorders in children
   d. Further acquisition and refinement of the skills required to deliver competent and cost-effective medical care to children with primary neurological and neurodevelopmental disorders, as well as those patients who have neurological/neurodevelopmental consequences of systemic diseases
   e. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
   f. Further experience teaching of medical students and service rotators in the adult rotations, and to further hone the skills of team management with an expanded role in the supervision and teaching of students and service rotators as well as pediatric residents in the pediatric rotations
   g. Initiation of career planning through individualized reflection and faculty mentoring

2. **Patient Care Skills** (including technical skills to be learned and demonstrated – must cover and assess)
   a. Acquisition and mastering of the neurologic history and examination in children
   b. Increased clinical experience in the management of acute neurologic problems in children in the hospital setting
   c. Further development of a clinical approach to localization and differential diagnosis of neurologic disorders in children
   d. Further acquisition and refinement of the skills required to deliver competent and cost-effective medical care to children with primary neurological and neurodevelopmental disorders, as well as those patients who have neurological and neurodevelopmental consequences of systemic diseases
e. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
f. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting

3. Interpersonal and Communication Skills
   a. Acquisition of the communication skills necessary in order to effectively communicate to families and other health care providers in the team about the patient’s medical condition, the necessary diagnostic tests, and management plan. These communication skills include excellent listening skills, ability to establish rapport with patient and family, ability to explain medical terms in a simplified manner, culturally sensitive care.
   b. Further acquisition and refinement of the skills required to deliver competent and cost-effective medical care to children with primary neurological and neuromuscular disorders, as well as those patients who have neurological and neuromuscular consequences of systemic diseases
   c. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
   d. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
   e. Further experience teaching of medical students and service rotators in the adult rotations, and to further hone the skills of team management with an expanded role in the supervision and teaching of students and service rotators as well as pediatric residents in the pediatric rotations

4. Professionalism
   a. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
   b. Initiation of career planning through individualized reflection and faculty mentoring
   c. Timely completion of consults’ medical records

5. Systems-Based Practice
   a. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
   b. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
   c. Further experience teaching of medical students and service rotators in the adult rotations, and to further hone the skills of team management with an expanded role in the supervision and teaching of students and service rotators as well as pediatric residents in the pediatric rotations
   d. Initiation of career planning through individualized reflection and faculty mentoring

6. Practice-Based Learning and Improvement
   a. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
b. Acquisition and demonstration of the skills required to function as part of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting

c. Further experience teaching of medical students and service rotators in the adult rotations, and to further hone the skills of team management with an expanded role in the supervision and teaching of students and service rotators as well as pediatric residents in the pediatric rotations

d. Initiation of career planning through individualized reflection and faculty mentoring

PGY-5 Rotation objectives:
Residents are given increased responsibility and autonomy in the development of evaluation and care plans with the goal of independent practice. Emphasis is placed on leadership, management and team building skills in coordinating the ward and consultation services. Senior residents are also encouraged to participate in educational activities and research projects facilitated by attending faculty.

1. Medical Knowledge (topics to be covered – must cover and assess)
   a. Mastering of the neurologic history and examination in children, as well as the ability to teach these skills to junior members of the team
   b. Increased clinical experience in the management of acute neurologic problems in children in the hospital setting
   c. Further development of a clinical approach to localization and differential diagnosis of neurologic disorders in children
   d. Further acquisition and refinement of the skills required to deliver competent and cost-effective medical care to children with primary neurological and neurodevelopmental disorders, as well as those patients who have neurological/neurodevelopmental consequences of systemic diseases
   e. Development of the skills required to function as the leader of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting
   f. Leader of the teaching of medical students and service rotators, and to further hone the skills of team management with an expanded role in the supervision and teaching of students and service rotators as well as pediatric residents in the pediatric rotations

2. Patient Care Skills (including technical skills to be learned and demonstrated – must cover and assess)
   a. Mastering of the neurologic history and examination in children, as well as the ability to teach these skills to junior members of the team
   b. Increased clinical experience in the management of acute neurologic problems in children in the hospital setting
   c. Further development of a clinical approach to localization and differential diagnosis of neurologic disorders in children
   d. Further acquisition and refinement of the skills required to deliver competent and cost-effective medical care to children with primary neurological and neurodevelopmental disorders, as well as those patients who have neurological/neurodevelopmental consequences of systemic diseases
   e. Development of the skills required to function as the leader of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting

3. Interpersonal and Communication Skills
   a. Mastering of the neurologic history and examination in children, as well as the ability to teach these skills to junior members of the team
b. Acquisition of the communication skills necessary in order to effectively communicate to families and other health care providers in the team about the patient's medical condition, the necessary diagnostic tests, and management plan. These communication skills include excellent listening skills, ability to establish rapport with patient and family, ability to explain medical terms in a simplified manner, culturally sensitive care.

c. Further acquisition and refinement of the skills required to deliver competent and cost-effective medical care to children with primary neurological and neurodevelopmental disorders, as well as those patients who have neurological/neurodevelopmental consequences of systemic diseases.

d. Development of the skills required to function as the leader of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting.

e. Leader of the teaching of medical students and service rotators, and to further hone the skills of team management with an expanded role in the supervision and teaching of students and service rotators as well as pediatric residents in the pediatric rotations.

4. **Professionalism**
   a. Mastering of the neurologic history and examination in children, as well as the ability to teach these skills to junior members of the team.
   b. Development of the skills required to function as the leader of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting.

5. **Systems-Based Practice**
   a. Development of the skills required to function as the leader of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting.
   b. Leader of the teaching of medical students and service rotators, and to further hone the skills of team management with an expanded role in the supervision and teaching of students and service rotators as well as pediatric residents in the pediatric rotations.

6. **Practice-Based Learning and Improvement**
   a. Mastering of the neurologic history and examination in children, as well as the ability to teach these skills to junior members of the team.
   b. Development of the skills required to function as the leader of a multidisciplinary health care team and to be able to organize the communication vehicles and resources required to transition patients to an outpatient setting.
   c. Leader of the teaching of medical students and service rotators, and to further hone the skills of team management with an expanded role in the supervision and teaching of students and service rotators as well as pediatric residents in the pediatric rotations.

---

**Research Elective Rotation**

**Rotation objectives:**

1. **Medical Knowledge** (topics to be covered – must cover and assess)
   a. Completion of a resident research project.
   b. Grand Rounds presentation prior to graduation.
   c. In depth research on a topic or area of interest to the resident.
2. **Patient Care Skills** (including technical skills to be learned and demonstrated – must cover and assess)
   a. Dependent on project or scholarly work presented

3. **Interpersonal and Communication Skills**
   a. Effective written communication or display of research
   b. Effective oral communication of research subject matter

4. **Professionalism**
   a. Establishment of a research or career plan with direct mentoring from faculty

5. **Systems-Based Practice**
   a. Establishment of a career plan with direct mentoring from faculty

6. **Practice-Based Learning and Improvement**
   a. Completion of a resident quality improvement or safety project and Grand Rounds presentation prior to graduation
   b. Establishment of a career plan with direct mentoring from faculty

**Overall Goals and Objectives with each training year**

Broadly, residents will acquire progressive responsibility throughout the program; residents will be expected to liaise more with staff and referring physicians. As a residency training program, this curriculum is designed to meet two objectives. It will prepare residents to sit for board exams at the completion of the program; and to individually and competently attend to the neurological disorders of childhood. Residents will gradually be able to expand their differential diagnoses of, treatment options for, and management of patients as their experience and training progresses. Evaluation of individual resident’s progress toward achieving these basic goals and the related core competencies (see appendix 6) of each rotation will be graded on a rotation-by-rotation basis, which is typically monthly. Residents must achieve a satisfactory rating for each rotation or will need to repeat that rotation; further details are noted below (see **Program Advancement**).

Knowledge gained with each year of training:
1) Recognition of common neurological diseases in childhood and their differential diagnosis.
2) Competency in performing the neurologic examinations of infants and children.
3) Recognition of abnormal patterns of neurodevelopment.
4) Interpretation of neuro-diagnostic studies in infants and children.
5) Diagnosis and management of neurological emergencies in children.
6) Development of effective interactions with consulting services and ancillary staff.
7) Acquisition of effective practice management skills.
8) Familiarity with best practice guidelines
9) Ability to incorporate evidence based medicine into practice
Sample Evaluations

Resident Evaluation of Faculty

Child Neurology Faculty Performance Evaluation

1. Ability to teach clinical neurology
   - Exceptional
   - Very Good
   - Good
   - Average

2. Ability to demonstrate neurological signs
   - Exceptional
   - Very Good
   - Good
   - Average

3. Availability and apparent attitude toward attending duties
   - Exceptional
   - Very Good
   - Good
   - Average

4. Efficacy of personal interactions
   - Exceptional
   - Very Good
   - Good
   - Average

5. Overall effectiveness as attending
   - Exceptional
   - Very Good
   - Good
   - Average

Overall Comments:

* Required fields
* Option description (pace moves over field to view)
Faculty Evaluation of Resident

Child Neurology Resident Performance Evaluation - Monthly

Evaluator: _____________________________
Evaluation of: _____________________________
Date: _____________________________

Please rate the following areas of performance for this resident using this scale: Below Expectations; Meets Expectations; Exceeds Expectations.

<table>
<thead>
<tr>
<th></th>
<th>Below Expectations</th>
<th>Meets Expectations</th>
<th>Exceeds Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient Care (History, Examination, Diagnoses, Judgment, Documentation) - Comments required for below or above expectations.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Comments

<table>
<thead>
<tr>
<th></th>
<th>Below Expectations</th>
<th>Meets Expectations</th>
<th>Exceeds Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Medical Knowledge (Scientific Background, Recent Neurological Literature) - Comments required for below or above expectations.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Comments

<table>
<thead>
<tr>
<th></th>
<th>Below Expectations</th>
<th>Meets Expectations</th>
<th>Exceeds Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Interpersonal and Communications Skills (Patients, Families, Other Professionals) - Comments required for below or above expectations.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Comments
4. Professionalism (Ethical Behavior, Sensitivity to Diverse Patient Populations) - Comments required for below or above expectations.

Comments

5. Practice-Based Learning and Improvement (Use of Evidence to Improve Practice) - Comments required for below or above expectations.

Comments

6. System-Based Practice (Understanding the Larger Context of Health Care) - Comments required for below or above expectations.

Comments

7. Overall assessment - Comments required for below or above expectations.

Comments
Program Evaluation
Child Neurology Residency Program Evaluation by Resident

1. Overall, the quality of didactic training provided to the residency program in
   [Table with options]
   Comments:

2. Departmental support for scholarly activity in
   [Table with options]
   Comments:

3. Faculty availability for teaching and supervision in
   [Table with options]
   Comments:

4. How your relationship with your mentor been beneficial to you (both professionally and personally)?
   Comments:

5. Overall, the resident orientation in
   [Table with options]
   Comments:

6. Program Director availability, involvement, and coordination of the residency program in
   [Table with options]
   Comments:

7. Resident’s availability and involvement with the residency program in
   [Table with options]
   Comments:

8. Program Coordinator availability, involvement, and coordination of the residency program in
   [Table with options]
   Comments:

9. Quality of didactic experience
   [Table with options]
   Comments:

10. Please comment on any particular unsatisfactory or non-productive aspects of the training program
    Comments:

11. Please comment on any particular unsatisfactory or non-productive aspects of the training program
    Comments:

12. Please comment on the strengths and most beneficial aspects of the training program
    Comments:

13. I have the following suggestions for improving the Child Neurology Residency Program:
    [Table with options]
    Comments:

14. Reporting System Errors in your program to report system errors and adverse events
    [Table with options]
    Comments:

15. Fatigue and Sleep Deprivation: Have you identified strategies to improve your fatigue and sleep depriva
    [Table with options]
    Comments:

16. Quality Improvement and Patient Safety: Have you identified strategies to improve your quality improve
    [Table with options]
    Comments:

17. Transitions of Care Program: Have you identified strategies to improve your fatigue and sleep depriva
    [Table with options]
    Comments:

18. Evidence of Clinical Time/efficiency: Have you identified strategies to improve your quality improve
    [Table with options]
    Comments:
## Conferences and Lectures

<table>
<thead>
<tr>
<th>DATE</th>
<th>MANDATORY</th>
<th>MONTHLY MANDATORY</th>
<th>OPTIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MON</td>
<td>12PM - EEG Conference</td>
<td>Every 3rd Monday</td>
<td>1st, 2nd, 4th and 5th Mon</td>
</tr>
<tr>
<td>TUES</td>
<td>8:30AM - Neuro-radiology Conference</td>
<td>(2nd Tues) 7:30AM Journal Club (will be held at night quarterly)</td>
<td>(1st, 2nd, 4th and 5th Tues) 12PM Child Psychology GRs</td>
</tr>
<tr>
<td>WED</td>
<td>12PM - Neurology Grand Rounds, 2PM - Neurology Resident Wednesday Didactics Series</td>
<td>(3rd Wed) 7:30AM Neuroradiology</td>
<td>(2nd and 3rd Wed) Neuro-Onc Tumor Conference</td>
</tr>
<tr>
<td>THURS</td>
<td>12:30PM Child Neurology Weekly Lecture Series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRI</td>
<td>7:30AM - Case Conference</td>
<td></td>
<td>(4th Fri) 7:30AM Stroke conference</td>
</tr>
</tbody>
</table>

### Lectures:
- **EEG Conference** - every Monday 12 noon to 1:00 pm in the Mt. Antero Conference Room
- **Neuro-radiology Conference** - every Tuesday 8:30-9:00 am in the Aspen conference room, on the first floor of the hospital on the back hall just before the double doors to the ED.
- **Journal Club** - the 2nd Tuesday of every month at 7:30 am Mt. Bross Conference room on the third floor of the hospital, just to the west of the outpatient elevators.
- **Neurology Grand Rounds** - every Wednesday 12:00 pm on various topics; usually meets in RC-1 North, Hensel Phelps East Auditorium, 1st Floor, P1B-1000 unless otherwise noted on the monthly schedule.
- **Neurology Resident Wednesday Didactics Series** - every Wednesday 2:00-5:00 pm on various topics. Meets in Research Bldg 2 - 5th Floor Conf. Room 5105.
- **Child Neurology Weekly Lecture Series** - every Thursday 12:30 noon to 1:30 pm in the Mt Democrat Conference room on the third floor of the inpatient pavilion.
- **Case Conference** - every Friday 7:30 am in the Mt Bross Conference room on the third floor of the hospital, just to the west of the outpatient elevators. Neurology residents will present patients for discussion.

### Optional Lectures:
- **Child Psychology Grand Rounds** - every Tuesday, 12 noon, (except the third Tuesday of the month)
- **Genetics Conference** - Every Wednesday, 3:00 p.m., Education 2 South, Room 2201
- **Developmental Disabilities Research Group (DDRG)** - 2nd Tuesday of the month, 8:30-9:30, ED 2, 5th floor, Room 2305. Contact Susan.Hepburn@ucdenver.edu
- **Developmental Psychobiology Research Group** - the 2nd and 4th Tuesday of the month from 10-11:30. (Academic Year Only-not during the summer) The Children's Hospital, Gary Pavilion (Basement), Denver Seminar Room

[http://www.ucdenver.edu/academics/colleges/medicalschool/departments/psychiatry/Research/DPRG/Pages/DPRGOverview.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/departments/psychiatry/Research/DPRG/Pages/DPRGOverview.aspx)
- Neuro-Oncology – CNS Tumor Conference – 2nd and 3rd Wednesday of the Month, 7:30-8:30 a.m., 7th Floor Pyramid Peak Conference Room
- Pediatric Neuroradiology Conference – 7:30 a.m., the third Wednesday of the Month, Mt Columbia Conference room, second floor conference center.
- Stroke Conference – 7:30 a.m. the fourth Friday of the month, Mt. Lincoln Conference room, on the first floor of the hospital on the back hall just before the double doors to the ED.
- Ethics – There are four Noon conferences throughout the year. Lecture announcements will be forwarded to Residents when they are received.

**Program Manual Statement**

The Pediatric Neurology Residency Program complies with Accreditation Council for Graduate Medical Education (ACGME) and UCDSOM Graduate Medical Education (GME) policies, procedures and processes which are available on the GME website and manual. In addition, direct access is available by clicking hyperlinks throughout this Program Manual. The program reviews all GME and program policies, procedures and processes at least annually with residents/fellows.
The training program complies with Accreditation Council for Graduate Medical Education (ACGME) and CU SOM Graduate Medical Education (GME) policies, procedures and processes that are available on the GME website. In addition, direct access is available by clicking the hyperlinks below. The program reviews all GME and program policies, procedures and processes at least annually with residents/fellows.

**GME Policies**

- Additional Pay for Additional Work Policy
- Concern/Complaint Policy
- Disciplinary Action Policy
- Duty Hours Policy
- Eligibility and Selection Policy
- Evaluation and Promotion Policy
- Grievance Policy
- International Residency Rotations Policy
- Leave Policy
- Medical Records Policy
- Moonlighting Policy
- Non-Compete Policy
- Physician Impairment Policy
- Prescriptions: Residents Writing for Staff, Family & Friends Policy
- Professionalism Policy
- Quality Improvement and Patient Safety Policy
- Supervision Policy
- Transitions of Care (Structured Patient Hand-off) Policy
- Policy on USMLE (and COMLEX) Examinations
- Work Environment Policy

**Key University of Colorado Policies**

- Sexual Harassment Policy
- Disability Accommodation Policy
- HIPAA Compliance
Medical Student Learning Objectives
GOALS AND OBJECTIVES OF MEDICAL STUDENT ROTATION IN CHILD NEUROLOGY

1. Learn to elicit a meticulous, accurate and complete history of the patient's neurological complaint.
2. Acquire skills in performing a detailed and comprehensive neurological examination on infants, children, and adolescents.
3. Recognize normal and abnormal developmental patterns.
4. Develop a conceptual framework for formulating the clinical case and arriving at a rational differential diagnosis and evaluation plan.
5. Become knowledgeable about core clinical features, treatment, and prognosis of common neurological conditions that affect infants, children, and adolescents.
6. Begin developing abilities and skills at interpreting commonly used neurodiagnostic tests, e.g., CSF studies, EEG and neuroimaging.

Concern/Complaint Policy

In addition to complying with the GME Concern/Complaint Policy, the Pediatric Neurology Residency program's policies and procedures are:

**Step One**
Discuss the concern or complaint to the program's Chief Resident, Service Director, Associate Program Director and/or Program Director, or Program Coordinator as appropriate.

**Step Two**
If the concern or complaint involves the Program Director and/or cannot be addressed in option one, residents and fellows have the option of discussing issues with the section heads, division chiefs, and department chairs as appropriate.

**Step Three**
If residents are not able to resolve their concerns or complaints within the program, they may contact the GME Designated Institutional Official (DIO) via one of the following:
- Confidential email: gme@ucdenver.edu
- Anonymous Reporting Form on the GME website: [http://www.ucdenver.edu/academics/colleges/medicalschool/education/graduatemedicaleducation/concerns/Pages/form.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/education/graduatemedicaleducation/concerns/Pages/form.aspx)
- GME Confidential Hotline at 303-724-5918

Other Resources for Concerns and Complaints:
1. **Professionalism First (Ethics Point)** is an anonymous reporting mechanism for residents and fellows to document exemplary professional behavior and identify professional lapses of either faculty, or other residents and fellows.  
   [http://www.ucdenver.edu/academics/colleges/medicalschool/facultyAffairs/ProfessionalismFirst/Pages/default.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/facultyAffairs/ProfessionalismFirst/Pages/default.aspx)

2. **Housestaff Association**: 303-724-3039  
   [http://www.ucdenver.edu/academics/colleges/medicalschool/education/graduatemedicaleducation/ResidentsFellows/Pages/HousestaffAssociation.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/education/graduatemedicaleducation/ResidentsFellows/Pages/HousestaffAssociation.aspx)

3. **University of Colorado Denver Ombuds Office**: 303-724-2950  
   [http://www.ucdenver.edu/about/departments/OmbudsOffice/Pages/OmbudsOffice.aspx](http://www.ucdenver.edu/about/departments/OmbudsOffice/Pages/OmbudsOffice.aspx)
Duty Hours Policy

The Child Neurology Residency program complies with the ACGME Common and specialty-specific Program Requirements copied below.

http://www.acgme.org/acgmeweb/Portals/0/PDFs/Specialty-specific%20Requirement%20Topics/D10-Duty_Hours.pdf

Eligibility and Selection Policy

In addition to complying with GME Eligibility and Selection Policy, the Child Neurology Residency program’s policies and procedures are:

The Pediatric Neurology Residency Program participates in the National Residency Matching Program (NRMP) and is currently approved to accept three trainees per year.

1. Each applicant must:
   a. be a graduate of an LCME (Liaison Committee on Medical Education) accredited medical school, or
   b. be a graduate of an AOA (American Osteopathic Association) accredited college of osteopathic medicine, or
   c. be an international medical graduate who holds a valid ECFMG (Education Commission for Foreign Medical Graduates) certificate, or
   d. have a full, unrestricted license to practice medicine in a US licensing jurisdiction, or
   e. have completed a fifth pathway program provided by a LCME-accredited medical school.

2. The University of Colorado School of Medicine (UCSOM) recognizes that Housestaff enrolled in UCSOM programs are trainees, not employees. As such, applicants must also be able to meet the conditions of the UCSOM House officer Training Agreement. Specifically, each Housestaff must meet the following criteria:
   Residents in our program must be a U.S. Citizen, lawful permanent resident, refugee, asylee, or possess the appropriate documentation to allow Resident to legally train at the University Of Colorado Denver School Of Medicine. (Canadian citizens must receive a letter from their province stating the province’s willingness to allow the resident to obtain a job in Neurology in Canada upon completion of Neurology residency training in the USA.)

3. Applicants must have documented strong interest in Neurology, as judged by statement, prior training, or research experience.

4. Applicants must have passed USMLE Parts I and II, or the equivalent, with a minimum average score on both tests that is typically between 200 and 210. Satisfactory results on Part III must be submitted to the department prior to beginning PGY3.

5. Excellent references are required from a minimum of three physicians or researchers with whom the applicant has worked on a regular basis for at least one month. For individuals
who have had prior training in another residency program, this must include a letter from the previous program director.

6. For individuals who have had prior training in another training program, successful completion of that year (or years) of the program, and receipt of certification, are required.

7. Applicants must have a Dean’s letter or equivalent, and documented grades from medical school. Graduation in the top 2/3 of the class is preferred.

8. Applicants must have the ability to hear, understand, speak, read, and write the English language, including English medical jargon, exceeding conversational level. Visually and hearing impaired applicants will be considered based on GME policy, the requirements of the program, the availability of resources and federal requirements.

9. Applicants must have the ability to comprehend and utilize computer software typically used in a USA hospital setting.

10. Continuous medical treatment of patients, with lapses not to exceed three years, must be documented (exceptions may be made for pregnancy and related child-care activities, or for obtaining a PhD). Patient treatment may include medical school and/or prior residency training.

11. Prerequisite training outlined as follows which can be initiated following one of three options:
   a. 2 years of residency training in pediatrics in the United States or Canada;
   b. one PG-1 year (as described in the Program Requirements for Residency Education in Neurology, Section I.A.1) and 1 year of residency training in pediatrics; or
   c. 1 year of pediatrics plus 1 year of basic neuroscience training. The program director must review and determine the acceptability of these initial 2 years of training.

All applicants should apply for prerequisite training separately.

12. Child Neurology only reviews applications submitted through ERAS.

13. The UCSOM and the Department of Neurology do not discriminate with regard to race, sex, age, religion, color, national origin, sexual orientation, or veteran status.

14. Additional information can be obtained from: [http://www.ucdenver.edu/academics/colleges/medicalschool/departments/pediatrics/subs/neuro/educat/fellows/Pages/fellows.aspx](http://www.ucdenver.edu/academics/colleges/medicalschool/departments/pediatrics/subs/neuro/educat/fellows/Pages/fellows.aspx)
Evaluation & Promotion Policy

Evaluation and Promotion Policy

Criteria for Promotion & Graduation
In addition to complying with the GME Evaluation and Promotion Policy, the Child Neurology Residency program's policies and procedures are:

1) Proof of successful completion of USMLE Parts I, II, and III must be submitted to the Program Director and Coordinator prior to the beginning of PGY3.

2) Satisfactory completion of curricular activities. Residents are instructed and evaluated with documentation by faculty in the following areas:
   a) History taking
   b) Organizing and recording data
   c) Using the history and data to form a differential diagnosis and plan

3) Attendance at the rotating series, seminars, basic science and core lectures scheduled by the child and adult neurology program. Attendance will be monitored.

4) Attendance at the pediatrics neurology journal club. Attendance will be monitored.

5) Core required "electives": 2 months of neuroradiology, 2 months of neurophysiology and 2 months of neuropathology (see Outline of Program above).

6) Attendance at weekly continuity clinic ½ day for full 3 years (see Outline of Program above).

7) One month FTE of outpatient psychiatry (see Outline of Program above).

8) Attendance at weekly neurosurgical/neuro-radiological/neuro-oncology case conferences to participate in the evaluation and management of neurosurgical diseases in children. Attendance will be monitored.

9) Regular participation in the rotating clinics: child neurology, genetics, metabolic, neuromuscular, rehabilitation and development (see Outline of Program above).

10) Attendance at weekly pediatric neurology conferences including EEG, electrophysiology, stroke, selected neurology topics of general interest and addressing bioethics, palliative care, pain relief, and cost-effective medical management. Attendance will be monitored.

11) Participation in teaching of other residents, medical students and allied health care personnel. Teaching will be evaluated by teaching staff.

12) Satisfactory professional and ethical behavior throughout the training program. These attitudes and behaviors are described in the UCDSOM House Staff Manual and the CHC Manual for Residents and Fellows.

13) Satisfactory performance on the residency in-service training exam.

14) Presentation of at least two M&M conferences during the residency

15) Successful completion of at least one scholarly activity, i.e., a poster, a research project, an original research paper, etc.
16) Successful completion of the ABPN exam requirements (see pages 22-23).

Residents are evaluated at least monthly by teaching faculty and these evaluations are placed in a confidential file that is accessible to the resident. Included in these evaluations are observations by teaching faculty of the resident’s ability to obtain a patient history, examine patients of various ages, discuss the findings, assessment and plan with the patient and family and to counsel the patient and family effectively.

Residents are also evaluated by other members of the child neurology staff including nurses, technicians, and support staff, as well as by patients and families (see sample evaluation forms in Appendix 5).

Resident evaluations are viewed by the program director and are evaluated within a month of being completed. These are then initialed by the program director and the original sent to the resident while a copy is placed in the resident’s permanent file. Any deficiencies or problems are identified and brought to the next monthly faculty meeting of the teaching staff which includes time for discussion of the residency program. Minutes of these meetings are kept on file with the residency program. Plans to address these deficiencies or problems are then brought to the resident’s attention with a special meeting within the next month. A summary of the meeting is placed in the resident’s permanent file.

Residents are formally evaluated semiannually by the program director, and are provided with written feedback regarding progress and attainment of objectives. Deficiencies are addressed if necessary. Residents are asked to sign the evaluations following any necessary corrections. The evaluations are then placed in their permanent files. Residents may append a written response to their evaluations. Residents are also evaluated formally at the end of the program. This final evaluation addresses and verifies the resident’s possesses sufficient professional ability to practice competently and independently.

Evaluations are kept with the resident’s permanent record. This record is available for resident review.

**Clinical Competency Committee**

The Clinical Competency Committee consists of six members. They include the Committee Chair, Residency Program Director, a representative from Adult Neurology and three other faculty members. The Committee meets twice a year (November and April) to review all residents. The committee uses personal experience, evaluations and feedback from other faculty members to rate each resident on the approved ACGME milestones for Child Neurology. The committee then creates a personalized development plan for each resident. The committee provides the feedback to the Program Director along with a recommendation on promotion, remediation and dismissal. The Program Director will discuss this information with the residents in their semi-annual review.

**Program Evaluation Committee**

The Program Evaluation Committee is comprised of a minimum of two Faculty members, (one being the Program Director), Program Coordinator and the residents. The committee meets bi-annually and discusses the following issues:

1. Planning, developing, implementing, and evaluating educational activities of the program
2. Reviewing and making recommendations for revision of competency-based curriculum goals and objectives
3. Addressing areas of non-compliance with ACGME standards
4. Reviewing the program using evaluations of Faculty, Residents, and others as reflected in the GME Evaluation & Promotion Policy.
Leave Policy

In addition to complying with the GME Leave Policy, the Pediatric Neurology Residency program’s policies and procedures are:

1. Maximum number of 3 days allowed in excess of available paid leave as addressed in CU GME policy per Specialty Certification Board requirements prior to resident encountering make up time.
2. How would an extended leave effect the Resident’s training schedule in terms of satisfactory completion of training program and eligibility to participate in examinations by relevant certifying board(s)?

Moonlighting Policy

The Child Neurology Residency program recognizes that moonlighting is not an activity associated with part of the formal educational experience; thus, residents are not allowed to participate in moonlighting activities.
Professionalism Policy

All residents/fellows must also abide by the professionalism principles and guidelines as stated by the ACGME program requirements.

Professionalism Education

The program provides the following professionalism education to residents:

Residents are provided professionalism education via GME New Resident Orientation and modules, all fifth year residents attend the Chief resident retreat, program didactic conferences and department grand rounds.

Quality Improvement/Patient Safety Policy

Quality Improvement and Patient Safety Policy

In addition to complying with the GME Quality Improvement and Patient Safety Policy, the Child Neurology Residency program's policies and procedures are:

Each resident is responsible for a quality improvement/patient safety project during his/her residency. The following QI/PS opportunities are underway within the Program:

- Participation in institutional Quality Management Committees
- Grand Rounds
- Patient Satisfaction Surveys
- Core Measures
- Utilization Management
- Elective Quality Improvement rotations (e.g., LEAN)
- Scholarly activity resulting in implementation of initiatives to improve patient quality and safety of care

The Program also participates in Quality Improvement/Patient Safety Conferences (e.g., Morbidity and Mortality). Participants complete the prescribed Patient Safety/M&M/ Occurrence Review Form if applicable to the institution.

The resident, along with faculty and relevant staff, helps to identify the quality improvement issue, develops a process to address the issue and then provides follow-up. The results are then presented to the department.
Supervision Policy

Supervision Policy
In addition to complying with the GME Supervision Policy, the Child Neurology Residency program’s policies and procedures are:

Program Supervision Policy

Resident supervision during the adult year is outlined in the adult neurology core manual.

During the pediatric years, residents will continue to be directly supervised by teaching staff. During clinical working hours, all patients seen by the resident are to be staffed by the attending physician. After-hours, new inpatient, outside phone-calls and emergency room consultations are to be staffed with the attending physician. The timing of staffing depends on level of training and patient acuity. An attending physician who is a member of the teaching staff is available while on overnight call. Documentation of all calls is to be made for later inclusion in patient charting; inclusion in this documentation of staffing by attending is necessary.

Process
The program maintains current call schedules with accurate information enabling residents at all times to obtain timely access and support from a supervising faculty member.

The Program Director will ensure that all program policies relating to supervision are distributed to residents and faculty who supervise residents. A copy of the program policy on supervision is included in the official Program Manual and provided to each resident upon matriculation into the program.

Progressive Authority & Responsibility, Conditional Independence, Supervisory Role in Patient Care

Resident supervision for the PGY 3 residents is outlined in the adult neurology core manual.

During the 2nd year (PGY-4), residents are expected to triage all after-hours calls (including inpatient and emergency room consultations) with the attending within the hour, depending on patient acuity. EEG monitoring and interpretation should be reviewed with the attending within 6 hours.

During the 3rd year (PGY-5), residents are expected to triage all after-hours calls with the attending within the next 24 hours, depending on patient acuity. EEG monitoring and interpretation should be reviewed with the attending within 12 hours.

Guidelines for When Residents Must Communicate with the Attending

Critical Events Policy
A critical event is defined as:

1. When a patient is transferred into the PICU or NICU
2. When a stroke is suspected or a stroke alert is called
3. Patient experiences or is suspected of experiencing a serious side effect to medication
4. When a patient dies
5. Legal threat made by a patient or family member towards a resident or institution
6. Suicidal threats, gestures and attempts
7. Injury of resident during work
Residents whose patient experiences fall within these Critical Events shall:

Event 1, 2, 3 and 6: Contact the patient’s attending. The attending will help the resident determine appropriate next steps.

Event 4: Immediately call the patient’s attending. Appropriate steps will be taken including meeting with the resident as soon as is possible.

Event 5: Contact the attending. The attending and resident will determine next steps including whether legal representatives from the institution should be involved.

Event 7: Report to the program director and program coordinator as soon as possible, to determine appropriate next steps. Residents are responsible for an ongoing jeopardy call system.
Clinical Responsibilities by PGY Levels for Supervision

Resident supervision for the PGY 3 residents is outlined in the adult neurology core manual.

From the Adult Residency Program Manual, page 11

IV. RESIDENT RESPONSIBILITIES

A. General Information

Procedures

- All lumbar punctures (LPs) should be supervised by a Neurology senior resident, or Neurology or Emergency Room Attending, until the practitioner has performed a minimum of 5 LPs. If, in emergency situations, no one with sufficient experience to supervise is available, the on-call attending should be notified before and after the procedure is attempted. Other procedures such as line placement or conscious sedation should be done by a consulting service with qualified residents and attendings only, unless explicit permission is given by the Neurology Attending on duty. Neurology residents should be proficient in the placement of nasogastric and Dobhoff tubes, intravenous lines, and Foley catheters by the end of internship.

- Additional neurologic procedures (NCV/EMG, EEG, Botox injection, transcranial Doppler ultrasound, and manipulation of vagal stimulators, deep brain stimulators, and Baclofen pumps, etc.) will be performed under the direct supervision of a Neurology attending.

During the 2nd year (PG-4), residents are expected to triage all after-hours calls (including inpatient and emergency room consultations) with the attending within the hour, depending on patient acuity. EEG monitoring and interpretation should be reviewed with the attending within 6 hours.

During the 3rd year (PG-5), residents are expected to triage all after-hours calls with the attending within the next 24 hours, depending on patient acuity. EEG monitoring and interpretation should be reviewed with the attending within 12 hours.
Transitions of Care Guidelines – Hand-off Process

Transitions of Care (Structured Patient Hand-off) Policy
In addition to complying with the GME Transitions of Care (Structured Patient Hand-off) Policy, the Child Neurology Residency program’s transition of care process that is used is:
Transition of Care (hand-off) will occur in the designated neurology workroom which minimizes distractions/interruptions. The residents utilize the electronic medical record system (EPIC) for appropriate handouts. Electronic documentation includes patient name, medical record number, age, sex, room, service, weight, neurologic history, medications, required actions and assigned primary neurologist. The receiving physician is given the opportunity to ask questions; thus, verbal and written handoffs occur. The Pediatric Neurology Residency Program is responsible for monitoring this process to ensure continuity of care and patient safety.

1. Written documentation for residents in a consultative role includes patient name, medical record number, age, sex, room, service, weight, neurologic history, medications, required actions and assigned primary neurologist. This is sufficient information to address active problems likely to arise during a brief period of temporary coverage or to assume care without error or delay when care is transferred.

2. All patients for whom a resident is responsible are included in the handoff.

3. Residents are on a minimum of two week inpatient neurology rotation. During which time, each resident assumes responsibilities for their assigned patients which assures continuity of care.

4. The Program Director will:
   a. Ensure assignments will be structured to minimize the number of transitions in patient care.
   b. Ensure residents and fellows are competent in communicating to the team members in the hand-over process.
   c. Work with the sponsoring institutions to ensure the availability of schedules that inform all members of the health care team of attending physicians and fellows currently responsible for each patient’s care.

5. As a consultative service, the neurology residents are not primarily responsible for documentation of a transfer note.

ACGME Specific Program Requirements
The program will incorporate the current Accreditation Council for Graduate Medical Education program requirements within this Program Manual annually.

Click her to view the ACGME Program Requirements.
Appendix 1: Fatigue Module Power point presentation.

Fatigue
Faculty and residents must be educated to recognize the signs of fatigue and sleep deprivation and must adopt and apply policies to prevent and counteract the potential negative effects on patient care and learning.

Fatigue Module Power point presentation.

Effects on Performance in Residency Training

Learning Objectives
1. List factors that put you at risk for sleepiness and fatigue.
2. Describe the impact of sleep loss on residents' lives
3. Recognize signs of sleepiness and fatigue in yourself and others
4. Describe common misconceptions about sleep and sleep loss
5. Provide alertness management tools and strategies

What is the Problem?
- We know relatively little about sleep needs & sleep physiology
- Performance problems associated with sleep deprivation and fatigue exists and may be underestimated
- There is no "drug test" for sleepiness
- The culture says…
  - Sleep is optional
  - You're a wimp if you need more sleep
  - Less sleep equals more dedication

Epworth Sleepiness Scale

What Causes Sleepiness?
- Myth: It’s the really boring noon conferences that put me to sleep.
- Fact: Environmental factors (passive learning situation, room temperature, low light level, etc) may unmask but DO NOT CAUSE SLEEPINESS.

A Conceptual Framework

The Circadian Clock Impacts You
- Myth: I’m one of those people who only need 5 hours of sleep, so none of this applies to me.
- Fact: Individuals vary from individual to individual in their response to the effects of sleep loss. But we are all able to accurately judge the implications.
- Myth: Getting less than 6 hours of sleep causes a "sleep debt" which must be paid off.

How Much Sleep is Enough?
- Myth: If you try to adapt to shifts in your sleep schedule, you will not be able to adapt to night shifts.
- Fact: People vary in their ability to adapt to shifts in their sleep schedule. Some people will be able to adapt to night shifts, while others will have more difficulty.
Sleep needs are genotypically determined and cannot be changed.

Fact: Humans do not "adapt" to getting less sleep than needed.

Significant reductions in comprehensiveness of history & physical exam documentation in second-year residents reported near night is between 6am and 11am.

Parks 2000

Emergency Medicine: Significant reductions in comprehensiveness of history & physical exam documentation in second-year residents.

Bertram 1988

Family Medicine: Errors associated with the night shift in training programs correlated with poor sleep.

American Academy of Sleep Medicine

Bottom Line:
You need to be alert to take the best possible care of your patients and yourself.

Impact on Medical Education
“We all know that you stop learning after 12 or 13 or 14 hours. You don’t learn anything except how to cut corners and how to survive.”

© American Academy of Sleep Medicine

Adverse Health Consequences: Sleep loss is associated with:

- Increased alcohol use
- Medications to stay awake
- Significant weight change
- Adverse health outcomes

Baldwin and Daugherty, 1998-9 Survey of 3604 PGY1,2 Residents

Consequences of Chronic Sleep Deprivation

Surgery: 20% more errors and 6% more length of stay in untrained surgeons compared to residents.

Jacques et al, 1994

Internal Medicine: Efficiency and accuracy of ECG interpretation impaired in sleep-deprived doctors.

Bergeron et al, 1998

Pediatrics: Time required to place an intra-arterial line increased significantly in sleep-deprived doctors.

Stone et al, 1999

Impact on Professionalism

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Bottom Line:
You need to be alert to take the best possible care of your patients and yourself.
Estimating Sleepiness

Myth: I can tell how tired I am and know when I'm not functioning as well.
Fact: Studies show that sleepy people underestimate their level of sleepiness and overestimate their level of alertness.
Fact: This sleeper you are, the less accurate your perception of how alert you are.
Fact: You can tell when you're very alert (or not) without knowing it!

Recognize the Warning Signs of Sleepiness

• Falling asleep in conferences or on rounds
• Feeling restless and irritable with staff, colleagues, family, and friends
• Having to check your work repeatedly
• Having difficulty focusing on the care of your patients
• Feeling like you just don’t care

Alertness Management Strategies

• There is no “magic bullet”
• Know your own vulnerability to sleep loss
• Learn what works for you from a range of strategies

Recovery from Sleep Loss

Myth: All I need is my usual 5 to 6 hours the night after call and I'm fine.
Fact: Recovery from on-call sleep loss generally takes 2 nights of additional sleep, not continued sleep.
Fact: Recovery sleep generally has a higher percentage of deep sleep which is needed to counteract the effects of sleep loss.

Caffeine

• Strategic consumption is key
• Use for temporary relief of sleepiness
• Cons:
  - disrupts subsequent sleep
  - tolerance may develop
  - diuretic effects

Napping

Naps temporarily improve alertness

Types: Preventative (pre-shift) and operational (on the job)
Length: Short naps no longer than 30 minutes avoid sleep inertia ("sleep inertia") that occurs when you’re awakened from deep sleep.
Long naps: 30 minutes to 2 hours (range 30 to 180 minutes)

DRUGS

Melatonin: Little data in residents
Modafinil: May be helpful in specific situations (persistent insomnia)
DXE: (dextroamphetamine, dextroamphetamine, mixed salts) to stay awake

Naps take the edge off but do not replace adequate sleep.

Myth: I'd rather just “power through” when I'm tired.
Fact: Directions of shift rotation affect adaptation.

Strategic consumption is key

• Cons:
  - disrupts subsequent sleep
  - tolerance may develop
  - diuretic effects

Alertness Management Strategies

There is no “magic bullet”

Know your own vulnerability to sleep loss

Learn what works for you from a range of strategies

Alertness Management Strategies

• Failing asleep in conferences or on rounds
• Feeling restless and irritable with staff, colleagues, family, and friends
• Having to check your work repeatedly
• Having difficulty focusing on the care of your patients
• Feeling like you really just don’t care

Napping

Timing: For complete take advantage of circadian "windows of opportunity" (2 am and 2 pm - 2 am, nap whenever you call)
Goals: Sleep latency – allow adequate recovery time (3-20 minutes)

Naps take the edge off but do not replace adequate sleep.

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Myth: I can tell how tired I am and know when I'm not functioning as well.
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Goals: Sleep latency – allow adequate recovery time (3-20 minutes)

Naps take the edge off but do not replace adequate sleep.
How To Survive Night Float

- Protect your sleep
- Nap before work
- Consider “splitting” sleep into two 4-hour periods
- Wear as much protective or bright light as possible when you need to be alert
- Avoid light exposure in the morning after night shift (be cool and wear dark glasses driving home from work)

“In Summary…”

- Fatigue is an impairment like alcohol or drugs.
- Fatigue, sleepiness, and burnout cannot be eliminated in residency but can be managed.
- Recognition of sleepiness and fatigue and use of restorative management strategies are simple ways to help combat sleepiness during residency.
- When sleepiness interferes with your performance or health talk to your supervisors and program director.

For more information visit:

www.aasmnet.org/MEDSleepprogram.htm

“Patients have a right to expect a healthy, alert, responsible, and responsive physician.”

January 1994 statement by American College of Surgeons
Re-approved and re-issued June 2002
Appendix 2: Sample Evaluation Forms

Resident Evaluating Attending Physician
Evaluator:  Subject: Status: Rotation:

Please rate the following areas of performance for this attending physician using this scale:

1) Ability to teach clinical neurology

Exceptional, -one of the very best  very good  average  below average  inadequate  N/A

2) Ability to demonstrate neurological signs

Exceptional, -one of the very best  very good  average  below average  inadequate  N/A

3) Availability and apparent attitude toward attending duties

Exceptional, -one of the very best  very good  average  below average  inadequate  N/A

4) Ease of personal interactions

Exceptional, -one of the very best  very good  average  below average  inadequate  N/A

5) Overall effectiveness as attending

Exceptional, -one of the very best  very good  average  below average  inadequate  N/A

Overall Comments:
Attending Physician’s Evaluation of Resident Performance
Department of Child Neurology
Evaluator:   Subject:   Rotation:

Please rate the following areas of performance for this resident using this scale:
Below Expectations  Meets Expectations  Exceeds Expectations

1) Patient Care (History, Examination, Diagnosis, Judgment, Documentation) - Comments required for below or above expectations.
   Below Expectations  Meets Expectations  Exceeds Expectations
   Comments

2) Medical Knowledge (Scientific Background, Recent Neurological Literature) - Comments required for below or above expectations.
   Below Expectations  Meets Expectations  Exceeds Expectations
   Comments

3) Interpersonal and Communications Skills (Patients, Families, Other Professionals) - Comments required for below or above expectations.
   Below Expectations  Meets Expectations  Exceeds Expectations
   Comments

4) Professionalism (Ethical Behavior, Sensitivity to Diverse Patient Populations) - Comments required for below or above expectations.
   Below Expectations  Meets Expectations  Exceeds Expectations
   Comments

5) Practice-Based Learning and Improvement (Use of Evidence to Improve Practice) - Comments required for below or above expectations.
   Below Expectations  Meets Expectations  Exceeds Expectations
   Comments

6) System-Based Practice (Understanding the Larger Context of Health Care) - Comments required for below or above expectations.
   Below Expectations  Meets Expectations  Exceeds Expectations
   Comments

7) Overall assessment - Comments required for below or above expectations.
   Below Expectations  Meets Expectations  Exceeds Expectations
   Comments

8) Does the resident assume responsibility appropriate to his/her level of training? (Comments required for below or above expectations)
   Below Expectations  Meets Expectations  Exceeds Expectations
   Comments

Annual Resident Evaluation of the Child Neurology Residency Program
Evaluator:   Subject:   Rotation:
This evaluation will be used as a tool to improve the Residency Program. Please be candid and constructive. Your responses will be kept confidential.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1) Overall, the quality of clinical training provided by the residency program is</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Good</td>
<td>Outstanding</td>
</tr>
<tr>
<td>2) Departmental support for scholarly activity is</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Good</td>
<td>Outstanding</td>
</tr>
<tr>
<td>3) Faculty availability for teaching and supervision is</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Good</td>
<td>Outstanding</td>
</tr>
<tr>
<td>4) Has your relationship with your mentor been beneficial to you both professionally and/or personally?</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Good</td>
<td>Outstanding</td>
</tr>
<tr>
<td>Comments</td>
<td></td>
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</tr>
<tr>
<td>5) Overall, the residents' workload is</td>
<td>Appropriate</td>
<td>Too Much</td>
<td>Too Little</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>6) Program Director availability, involvement, and coordination of the residency program is</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Good</td>
<td>Outstanding</td>
</tr>
<tr>
<td>7) Section Chief availability and involvement with the residency program</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Good</td>
<td>Outstanding</td>
</tr>
<tr>
<td>8) Program Coordinator availability, involvement, and coordination of the residency program is</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Good</td>
<td>Outstanding</td>
</tr>
<tr>
<td>9) Quality of didactic experience</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Good</td>
<td>Outstanding</td>
</tr>
</tbody>
</table>

Please comment on any particular unsatisfactory or nonproductive aspects of the training program: Comments

Please comment on the strengths and most beneficial aspects of the training program: Comments

I have the following suggestions for improving the Child Neurology Residency Program: Comments
The following statements describe physician behaviors. Compared to other residents at the same level of training, rate the resident's performance using the grade scale, and please include comments at the bottom of the form. Your input is extremely valuable in the overall assessment of this resident. Thank you.

**Professionalism**

1) **Demonstrates respect for patient’s culture**
   - Never
   - Sometimes
   - Half the time
   - Often
   - Always
   - Unable to Evaluate

2) **Demonstrates respect for patient’s gender**
   - Never
   - Sometimes
   - Half the time
   - Often
   - Always
   - Unable to Evaluate

3) **Demonstrates respect for patient’s disability**
   - Never
   - Sometimes
   - Half the time
   - Often
   - Always
   - Unable to Evaluate

4) **Demonstrates respect for patient’s sexual orientation**
   - Never
   - Sometimes
   - Half the time
   - Often
   - Always
   - Unable to Evaluate

5) **Demonstrates respect for patient’s age**
   - Never
   - Sometimes
   - Half the time
   - Often
   - Always
   - Unable to Evaluate

6) **Demonstrates respect for patient’s religion**
   - Never
   - Sometimes
   - Half the time
   - Often
   - Always
   - Unable to Evaluate

7) **Demonstrates respect for nurses**
   - Never
   - Sometimes
   - Half the time
   - Often
   - Always
   - Unable to Evaluate

8) **Demonstrates respect for support staff**
   - Never
   - Sometimes
   - Half the time
   - Often
   - Always
   - Unable to Evaluate

9) **Seeks consultation/supervision when appropriate**
   - Never
   - Sometimes
   - Half the time
   - Often
   - Always
   - Unable to Evaluate

10) **Functions effectively as a member of the team**
    - Never
    - Sometimes
    - Half the time
    - Often
    - Always
    - Unable to Evaluate

11) **Completes assigned tasks**
    - Never
    - Sometimes
    - Half the time
    - Often
    - Always
    - Unable to Evaluate

12) **Manages personal stress responsibly**
    - Never
    - Sometimes
    - Half the time
    - Often
    - Always
    - Unable to Evaluate

13) **Answers pages in a timely fashion**
    - Never
    - Sometimes
    - Half the time
    - Often
    - Always
    - Unable to Evaluate

14) **Is condescending to you or patients/families**
    - Never
    - Sometimes
    - Half the time
    - Often
    - Always
    - Unable to Evaluate

15) **Is abusive to you or patients/families**
    - Never
    - Sometimes
    - Half the time
    - Often
    - Always
    - Unable to Evaluate

16) **Respects patient’s right to make choices regarding their care**
    - Never
    - Sometimes
    - Half the time
    - Often
    - Always
    - Unable to Evaluate

17) **Responds appropriately to the limitations imposed by patient’s illness**
18) Responds in a timely fashion to nursing requests for help
   Never  Sometimes  Half the time  Often  Always  Unable to Evaluate

Interpersonal and Communication Skills

19) Communicates effectively with patients and patients' families
   Never  Sometimes  Half the time  Often  Always  Unable to Evaluate

20) Communicates effectively with other health care professionals
   Never  Sometimes  Half the time  Often  Always  Unable to Evaluate

21) Communicates referral information to patients
   Never  Sometimes  Half the time  Often  Always  Unable to Evaluate

22) Maintains complete medical records
   Never  Sometimes  Half the time  Often  Always  Unable to Evaluate

23) Listens to and considers what you have to say
   Never  Sometimes  Half the time  Often  Always  Unable to Evaluate

24) Handles demanding interpersonal situations in a respectful and effective manner
   Never  Sometimes  Half the time  Often  Always  Unable to Evaluate

25) Handles messages appropriately in a timely manner
   Never  Sometimes  Half the time  Often  Always  Unable to Evaluate

Overall Comments:
Sample Annual Self Evaluation form

Annual Performance Self Evaluation
(completed annually by each resident)

Name of Resident: _____________________________________________

Section: ____________________________ Year of Residency: ___________________________

Date Evaluation Completed: ____________________________

1. During the past year, please estimate your percent distribution of time.

<table>
<thead>
<tr>
<th></th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Clinical Service</td>
<td></td>
</tr>
<tr>
<td>Scholarly Activity (teaching, research, papers, presentations, conferences, reading, etc.)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

2. How does the above distribution fit with your goals? Circle: YES / NO

3. Have you received written progress reports at least twice a year on your performance as a resident? Circle: YES / NO

4. Do you have one or more mentors that you meet with regularly? Circle: YES / NO
   If so, please list them and designate what type of mentor they are (i.e., research mentor, career mentor, teaching mentor, etc.)

5. Have you submitted any abstracts or papers in the past academic year?

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>Number of abstracts submitted</td>
<td></td>
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<tr>
<td>Number of papers submitted</td>
<td></td>
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<tr>
<td>Number of funding proposals submitted</td>
<td></td>
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<tr>
<td>Number of oral presentations of at regional or national meetings</td>
<td></td>
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</tbody>
</table>

6. Have you had the opportunity to give any formal educational sessions? Circle: YES / NO
   If yes, please list (i.e., noon conferences to house staff, lectures to medical students, etc.)

7. Have you received any evaluations of your teaching? Circle: YES / NO

8. What concerns do you have about your residency?

9. If you are finishing your residency, what are your plans for the next academic year?

**Please save any abstracts, papers, educational handouts and evaluations you have received in the past year in your “portfolio”, and please give a copy to your Residency Director to be placed in your official file.
**Sample Annual/Semi-annual evaluation form**

### Competency I: Patient Care

<table>
<thead>
<tr>
<th>Assessment Method(s)</th>
<th>Below Expectations</th>
<th>Meets Expectations</th>
<th>Exceeds Expectations</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>(D) Direct observation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(T) Standardized test (written/oral)</td>
<td></td>
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<tr>
<td>(C) Clinical records review</td>
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<tr>
<td>(E) Evaluation by other providers &amp; staff</td>
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<tr>
<td>(S) Patient Survey</td>
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<tr>
<td>(M) Mini clinical exam</td>
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<tr>
<td>(P) Portfolio review</td>
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<tr>
<td>(O) Other (specify)</td>
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</tr>
</tbody>
</table>

1) Information Gathering Skills
   a. Interview elicits necessary information
   b. Physical exam conducted skillfully
   c. Review of clinical record captures required information
   d. Establishes rapport with patient

2) Assessment and Data Analysis
   a. Considers latest evidence
   b. Orders appropriate tests
   c. Interprets test results properly
   d. Formulates differential diagnosis

3) Treatment Planning
   a. Develops informed and appropriate recommendations and interventions
   b. Follows through appropriately
   c. Plans procedures appropriately
   d. Coordinates with other providers
   e. Obtains necessary consent to proceed

**Reviewer Comments:**

- [ ] I agree with this evaluation
- [ ] I disagree with this evaluation

__________________________
Resident initials and date
## Competency II: Medical Knowledge

<table>
<thead>
<tr>
<th>Assessment Method(s)</th>
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<tr>
<td>(P) Portfolio review</td>
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<tr>
<td>(O) Other (specify)</td>
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</table>

1) Demonstrates investigatory thinking
2) Demonstrates analytical thinking
3) Demonstrates knowledge of basic sciences
4) Demonstrates application of basic sciences
5) Considers evidence-based information
6) Considers range of therapeutic interventions
7) Knowledge of practice guidelines

Reviewer Comments:

☐ I agree with this evaluation  ☐ I disagree with this evaluation

Resident initials and date
### Competency III: Practice-Based Learning and Improvement

<table>
<thead>
<tr>
<th>Assessment Method(s)</th>
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<tr>
<td>(P) Portfolio review</td>
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<tr>
<td>(O) Other (specify) – Annual M&amp;M Report</td>
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</tbody>
</table>

1) Self-assesses for needed improvement

2) Utilizes evidence from scientific studies

3) Performs literature searches appropriately

4) Utilizes information technology resources

5) Facilitates professional learning with peers

**Reviewer Comments:**

☐ I agree with this evaluation  ☐ I disagree with this evaluation

________________________
Resident initials and date
## Competency IV: Interpersonal and Communication Skills

<table>
<thead>
<tr>
<th>Assessment Method(s)</th>
<th>Below Expectations</th>
<th>Meets Expectations</th>
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<tr>
<td>(O) Other (specify)</td>
<td></td>
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</tr>
</tbody>
</table>

1) Creates a working relationship with patients

2) Demonstrates active listening skills

3) Communicates appropriately and effectively with peers and faculty

4) Communicates appropriately and effectively with nursing and technical staff

5) Demonstrates appropriate non-verbal behavior

6) Writes in a timely, legible and effective manner

Reviewer Comments:

☐ I agree with this evaluation ☐ I disagree with this evaluation

__________________ Resinident initials and date
## Competency V: Professionalism

### Assessment Method(s)
- (D) Direct observation
- (T) Standardized test (written/oral)
- (C) Clinical records review
- (E) Evaluation by other providers & staff
- (S) Patient survey
- (M) Mini clinical exam
- (P) Portfolio review
- (O) Other (specify)

<table>
<thead>
<tr>
<th></th>
<th>Below Expectations</th>
<th>Meets Expectations</th>
<th>Exceeds Expectations</th>
<th>Not Applicable</th>
</tr>
</thead>
</table>

1) Behavior demonstrates preparation and organization
2) Is punctual and respectful of others' time
3) Responds to messages and pages promptly
4) Responds to patient concerns appropriately
5) Completes record and documentation requirements timely and appropriately
6) Demonstrates ethical standards of behavior including honesty and accountability
7) Attempts to learn from mistakes
8) Sensitive to patient cultural, age, gender and disability issues
9) Effectively and professionally teaches and mentors junior residents and students

**Reviewer Comments:**

☐ I agree with this evaluation  ☐ I disagree with this evaluation

__________________
Resident initials and date
### Competency VI: Systems-Based Practice

**Assessment Method(s)**

- (D) Direct observation
- (T) Standardized test (written/oral)
- (C) Clinical records review
- (E) Evaluation by other providers & staff
- (S) Patient survey
- (M) Mini clinical exam
- (P) Portfolio review
- (O) Other (specify)

<table>
<thead>
<tr>
<th>Below Expectations</th>
<th>Meets Expectations</th>
<th>Exceeds Expectations</th>
<th>Not Applicable</th>
</tr>
</thead>
</table>

1) Demonstrates understanding of relationship between specialty practices and how those integrate with the larger delivery system

2) Demonstrates knowledge of various systems (HMO, PPO, other)

3) Demonstrates knowledge of non-acute provider settings (Rehab, Skilled Nursing)

4) Demonstrates the ability to work with other providers to optimize cost-effective service

5) Demonstrates advocacy for patients within the health care system

**Reviewer Comments:**

☐ I agree with this evaluation  ☐ I disagree with this evaluation

________________________

Resident initials and date

---

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**Advancement Recommendation**

☐ Based upon the performance as indicated by this evaluation, ___________________________ is ready to assume more responsibility as a resident and should progress to the next level of clinical training.

Advance to ___________________________ level

_________________________________________

Program Director Signature

☐ Based upon the performance as indicated by this evaluation, ___________________________ is not ready to assume more responsibility as a resident and should not progress to the next level of training. A letter addressing additional performance requirements will be prepared and co-signed by the resident.

_________________________________________

Program Director Signature

☐ Original to resident permanent file

_________________________________________  ____________________________

Program Coordinator Signature              Date
Appendix 3: The Children’s Hospital Dress Code (updated July 2009)

Title: Dress Code

General Information
Staff personal appearance and hygiene has a significant effect on ensuring a professional, safe, and healthy environment for patients, families and other staff. A professional, well-groomed image is a direct reflection on a welcoming, efficient, orderly and healing environment. It may be necessary for organizational dress code standards to supersede individual preferences/self expression.

Eligibility
All staff who provide services at Children’s Hospital Colorado (Children’s Colorado) and all Network of Care locations, including but not limited to volunteers, contractors, and faculty and students who practice at Children’s Colorado.

Guideline
I. The following guidelines are intended to assist staff members in meeting Children’s Colorado standards. Guidelines follow business casual dress, with the primary focus on clean, neat and professional appearance. Attire should be appropriate for departmental business needs. Hospital Leadership reserves the right to decide what attire is appropriate in their area(s).

II. Children’s Colorado management may designate “special occasion days” such as Dress Up, Dress Down for Children’s, Western Day and Halloween. General dress code standards apply on special occasion days; clothing must be clean and appropriate.

III. General dress code standards apply for staff who attend meetings, training and events at the hospital or a Network of Care location outside of their regularly scheduled work time.

IV. Identification/name badges must be worn and visible at all times. (See the Human Resource Guideline Identification Badges.)
   A. Identification badges must be worn above the waistline with the picture side of the badge visible at all times.
   B. If the badge is displayed using a neck lanyard, the lanyard must be a breakaway variety.
   C. Mechanisms used to display badges must be cleaned regularly.

V. Clothing
   A. Clothing must be clean, unwrinkled, stain-free, properly fitting, and in good repair.
   B. Clothing must have a modest neckline.
   C. Skirt and dress length must be at or below the knee.
   D. Denim skirts and dresses (knee length) may be worn; overall appearance must be professional.
   E. Tailored capri pants (calf length) may be worn.
   F. Scrubs may be required in designated sterile areas. If required, hospital furnished, freshly laundered scrubs must be put on upon arrival at work and may not be worn to/from Children’s.
   G. Uniforms may be required in designated areas. Uniforms must be maintained in good condition, clean, and worn as recommended by department manager.
   H. Lab coats and ties must be laundered regularly.

   Services
   C. Guidance on natural nails, artificial nails and nail polish can be found in the Infection Control Manual, Hand Hygiene, Hand Hygiene Products and Artificial Nails (IC-007).
X. Jewelry and Body Art
   A. Jewelry and other accessories, if worn, must be professional and appropriate for safety in patient care areas.
   B. Ear piercings including studded earrings and small hoops, gauged earrings, less than ⅛ inch in diameter may be worn.
   C. A small stud on the side of the nose may be worn.
   D. Every effort must be made to cover visible tattoos.
   E. Inappropriate not permitted
      1. Pins, buttons, jewelry, emblems, or insignia bearing a political, controversial, inflammatory, or provocative message
      2. Jewelry adorning body piercings, other than ears and nose (as described above). Tongue jewelry is not permitted.

PROCEDURE

Department managers/supervisors are responsible for monitoring and enforcing appearance guidelines and determining appropriateness of attire/appearance, based on job duties and responsibilities.

   A. If attire or appearance is out of compliance with Children’s Colorado policy, the department manager/supervisor will hold a private discussion with the staff member and may ask him/her to change their appearance immediately. If the staff member is sent home to change into appropriate attire, time away from work will be considered leave without pay. Written documentation detailing the incident and disciplinary actions taken will be placed in the employee file.

   B. If additional guideline violations occur, further disciplinary action may be taken, up to and including suspension without pay and/or termination. The department manager/supervisor may consult with Human Resources to determine the appropriate disciplinary steps.

RELATED DOCUMENTS/REFERENCES

Affine Surgical (Period 002)
Discipline guideline
Bloodborne Pathogen (B&B) Exposure Control Plan (Infection Control Policy and Procedure Manual)
Hand washing, Hand Hygiene Products and Artificial Nails (Infection Control Policy and Procedure Manual)
Identification Badge guideline

REVIEWED BY

Human Resources Guideline Committee
Senior Management and Executive Team
Nursing Leadership
Appendix 4: Instructions for logging duty hours into Medhub

Instructions for Logging Duty Hours in MedHub

Click on this link to watch a video tutorial: https://ucdenver.medhub.com/core/demos/dutyhours/dutyhours-demo.html

1. From MedHub home screen, select “Incomplete Duty Hours” under “Urgent Tasks”:

![MedHub home screen](image1)

2. Use your mouse to click on your start time and end time. If your end time is on the next day, still click on that time. If you make a mistake, click on the red “x” (see below) and re-enter the correct time.

![MedHub duty hours](image2)
3. The default is for logging hours is “Standard Work Period”. If you are logging “Home Call” or “Work from Home”, then click on the box showing the shifts and select what type of work period you are recording.

4. Once you are finished, you click on the button in the bottom left corner that says “Submit Completed Duty Hours” – it’s that easy! Note in the bottom right corner your hours for the week will be added for you.
IF A VIOLATION IS REPORTED:

5. Once you hit “Submit Completed Duty Hours” and there is a potential violation, a screen will come up where you must provide information before you can continue. Select the reason which applies to you and then hit submit.

---

6. If there are any other issues, you will need to choose the reason from the drop-down menu, and provide a brief explanation.

---

7. Once you have completed the requested information you will once again be able to “Submit Completed Duty Hours”

---

8. You will then see a green bar at the top of the screen showing you have successfully submitted your duty hours.

---

FOR QUESTIONS ABOUT DUTY HOURS LOGGING PLEASE CONTACT TARA WOOD IN THE GME OFFICE – 303-724-5859 OR tara.wood@ucdenver.edu
Appendix 5: Instructions for submitting vacation requests into Medhub

REQUESTING VACATION OR AN AWAY CONFERENCE IN MEDHUB

All requests for vacation or an away conference must be entered into Medhub. This allows for documentation and compliance with the GME policy that all requests are approved by the program director.

1) Go to https://ucdenver.medhub.com/index.mh and log into Medhub.

2) Medhub will open directly on to the Main page.

Scroll down the main page until you see the Request Forms box on the left side of the screen. Click on Absence/Vacation Request Forms (tip: you can move this box up the screen by clicking on the up arrow in the top right corner of the box).

3) Now you are on the request page. Click on the tab that represents your request type – either vacation or conference (sick time and leave of absence will be documented by the program coordinator).
4) Once you have chosen the type of leave you are requesting, enter the fields accordingly (examples below), click Submit Request.

5) A green heading will appear at the top of the page to let you know that your request has been submitted and is pending approval. You will receive an email confirmation if it is approved or rejected.
Appendix 6: Required Forms for Genetics Clinic

Clinic Check List

Prior to Clinic

- The Genetic Counselor (GC) will provide you with the schedule (1 ½ weeks prior to clinic) and any medical records that have been faxed
- Review the patient chart and records in both EPIC and Docuware. If nothing is found there contact Mitsi in the front desk for paper charts (takes at least 2 days to obtain these charts)
  - *If paper charts are not available please contact the family directly and inquire about their referral reason and brief medical history*
- Conduct a literature search to determine possible diagnosis of patient, if new testing options are available, and medical management needs
- *Please email both the Dr. and GC your prep form/outline 2 business days prior to you seeing the patient. Therefore if you are scheduled to see patients on a Monday, your preps should be sent out no later than 4 pm on Thursday*
- If your clinic patient cancels/reschedules whoever the new patient is that is put in that time slot is your patient. Please contact the GC for that day if you notice your patient has changed.

During Clinic

- Check that your patient has come in via EPIC (blue dot will appear). Once patient is checked in look at the face sheet in EPIC and record height/weight/head circumference/blood pressure/pulse on your intake form
- Complete the medical history of the patient – Chief Complaint, Prenatal, Birth/Neonatal, Feeding/Growth, General Medical, Developmental, Review of Systems, Parent Concerns
- Photograph taken of the patient – *Please take a picture of the patient’s name/mrn and then take a picture of the child*
  - One profile and one frontal (glasses off if necessary)
  - Take additional close up/full body shots if need be to illustrate key features
- Present the case to the MD – Discuss the patient history, symptoms, physical features, differential diagnosis (if necessary), recommendations/what testing should be performed
- Fill out the clinic sheet: recommendations, diagnosis (list symptoms if diagnosis is still unknown), inheritance pattern, number people in room/number of those affected, and follow-up timeframe.

Labs and Testing

- Confirm testing recommendations with the MD and GC
- Determine if insurance pre-authorizations are necessary by asking the GC
- Complete the correct requisition forms and enter the testing/lab info into EPIC
- Prior to giving any forms to the family confirm with the MD and GC that everything is correct and the right tests have been ordered.
After Clinic/Patient Follow-Up

- **Create progress note in EPIC within 48-72 hrs.**
- All records that will be scanned into EPIC must have a patient specific label placed on the document.
  - Ex: Pedigree forms, test results, outside eval forms, imaging reports, etc
  - Give all documents with the sticker to the GC to be scanned into EPIC
    - Please note if there are multiple pages to a form only adhere 1 sticker to the first page and paper clip the pages together
- Make sure to check your email, EPIC inbox, and voicemail daily for test results and/or questions from the family regarding their appointment.
- Make sure to check the patient’s chart for test result information/updates
- Discuss the results with the MD
  - Send the family and PCP a summary letter of the results
  - The family may wish to return to clinic. Please discuss with family, MD, and GC about getting the family seen.
- Set up an Excel spreadsheet consisting of the following:

<table>
<thead>
<tr>
<th>Patient name/MRN</th>
<th>DOV</th>
<th>GC</th>
<th>Dr.</th>
<th>Recomm.</th>
<th>Labs Done?</th>
<th>Results?</th>
<th>DX?</th>
<th>1st Tier of Tests</th>
<th>Results reported?</th>
<th>Results?</th>
<th>2nd Tier of Tests</th>
<th>Results?</th>
<th>Case closed?</th>
<th>Y or N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shay Smith/75248965</td>
<td>10/05/2010</td>
<td>Kathleen Brown, Saenz</td>
<td>WGA, UOA, AA, CMP</td>
<td>Yes- all complete. Pos for Williams Syndrome: Del on chr 7</td>
<td>Possible Williams Syndrome</td>
<td>WGA</td>
<td>Yes, sent to family and PCP</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**A case is closed when:**
- All recommended testing has been completed
- Results have been called out to the family/PCP and they have been sent a letter discussing the results
  - A letter can be generated through EPIC
- If the patient has not pursued testing please send a letter to the child’s PCP and family and remind them of the testing recommendations
  - If the family would like to pursue testing coordinate the testing
  - If the family does not want testing please document that in EPIC and send a letter to the PCP and family via EPIC stating such (case is closed if patient does not want to pursue testing)

***Please make sure the patient chart is well organized and as complete as possible before you sign-out and turn over your cases to me.***

Comment [TB1]: Can Baker and Saenz confirm this is up to date?
Observation Cases

Clinic/ Time:
Age of Patient:
Age of Onset of symptoms:

Patient Symptoms

Differential Diagnosis (If there is a diagnosis what is the condition?)

First Tier of testing and why

Second Tier of testing and why (if necessary)

What is the recommended clinical management? If there is a diagnosis what is the clinical management for that syndrome?
### Genetics Evaluation: Prep Form

**Pt Name:**

**Insurance:**

**DOB:**

**Clinic**

**TCH #**

**DOE**

**Parents:**

**Age**

**PCP:**

**Referral PCP:**

**Phone:**

**Phone:**

**Fax:**

**Fax:**

**Patient referred for:**

**HPI:**

**Ears/Nose/Mouth:**

**Respiratory:**

**Cardiovascular:**

**Gastrointestinal:**

**Genitourinary:**

**Musculoskeletal:**

**Integumentary:**

**Neurological:**

**Psychiatric:**

**Endocrine:**

**Hematologic/Lymphatic:**

**Allergic/Immunologic:**

**Medications:**

**History of Seizures:**

**Pregnancy/Birth/Neonatal Histories:**

**Medical History:**

**Previous evaluations:**

***

**Developmental History:**

**Gross Motor:**

**Fine Motor:**

**Social:**

**Speech:**

**Milestones:**

**Sat:**

**Crawled:**

**Walked:**

**First words:**

**Toilet Trained:**

**Therapies:**

**PT:**

**OT:**

**Speech:**

**Other:**

**School/Daycare setting:**

**Setting:**

**Days a week:**

**Hours per day:**

**IEP/Special Services received:**

**Parental concerns:**

**Psychosocial History:**

**Family History:**

**ROS:**

**Constitutional:**

**Eyes:**

**Physical Examination:**

**GENERAL APPEARANCE:**

**SKIN:**

**HEENT:**

**NECK:**

**CHEST/ RESPIRATORY:**

**CARDIOVASCULAR:**

**ABDOMEN:**

**EXTREMITIES:**

**MUSCULO-SKELETAL:**

**GU:**

**NEUROLOGIC:**

**Studies and Imaging:**

**IMPRESSION:**

**Differential diagnosis includes:**

**Recommendations** for additional work-up include (to be coordinated by Genetics/PCP/Family):

1. ***

**Follow-up in:** ________________________
1. Family History
- Rebecca and Tyler are first cousins; Rebecca’s mother and Tyler’s father are brother and sister.
- Rebecca has two sisters, one of which is her identical twin, and one brother. Both of her parents are deceased, but both sets of grandparents are alive and well and have no reported health problems. Ethnicity is reported to be German.
- Tyler has two brothers, although one is a half brother through his father. He does not know much about his paternal family history, only that his father’s parents are alive. His mother’s parents are still alive and have no reported health concerns. Ethnicity is reported to be German.

2. Family History
- Melissa: is 30 yrs old and does not report any major concerns about her health. **Though when you see her you notice that she has a hypo pigmented spot on her arm**. She has one brother who is 28 and has a history of seizures. He does not have kids and just found out that he is unable to do so. She has 25 year old twin sisters. One has a son who is David’s age and the other has identical twin girls who are 10. Melissa’s parents are first cousins: her mother’s father and her father’s mother are brother and sister. She reports that only her grandparents (maternal and paternal) are deceased. Ethnicity is Iranian.
- Nick: is a 32 yr old who reports that he has a history of renal cysts and retinal hamartomas. He is now in good health and has not had any concerns for his health in the past years. He has one sister who is Melissa’s age, she also has renal cysts and a benign heart tumor as a child. She does not have any children (by choice). Nick reports that his parents died when they were in their 50s due to a car accident. He does not know much about their medical history, only that his mother also had renal cysts and his father had diabetes type II. Ethnicity is German.

3. Family History
- Luis: is 52 years old and only reports that he has a history of myopia. He states that his mom told him he was very difficult to feed when he was a baby and had to have some sort of repair done. He does not recall what she told him. He has 3 brothers and two sisters. One brother has since passed away. He reports that none of them have any medical concerns that he knows of and all the children of those siblings are fine as well. His parents are still alive at 75. Ethnicity is reported as Mexican.
- Sarah: is 38 years old and reports that she does not have any medical concerns nor did she as a child. She reports that she is adopted and does not know much about her biological family other than that her parents were Mexican.

4. Family History
- Tamara: is 25 years old who reports that she is generally in good health. She is a runner so she states that she has some muscle weakness here and there. She only has one brother who is wheel chair bound since age 12 and some learning difficulties. He is 16 and does not have any kids. She reports that her mother is still living (her father passed away in a car accident at age 40). Her mother also has 2 sisters and 1 living uncle. She reports that she had other uncles who passed away in their 20s. Ethnicity is reported as African American.
- Carter: is 30 years old and is reportedly in good health. He is adopted but has a lot of information from his family. He has 3 siblings via his dad (2 brothers and 1 sister) all of which are younger than him. He also has one sister from his mom. He has two boys from a previous marriage both of which are healthy. Ethnicity is reported to be European.
Family history – 1

Referral Reason
Tyler and Rebecca are a married couple who are visiting genetics today to discuss their daughter (3 months).

Medical History/Background
Rebecca had been having difficulty conceiving, and has had 3 first trimester miscarriages. After a routine work-up at a fertility specialist it was determined that Rebecca had a balanced translocation between chromosomes 11 and 22. Though they were told it would be difficult to conceive Rebecca and Tyler were able to get pregnant. Rebecca recently gave birth to a little girl who has been having trouble feeding, has a cleft palate, and is slightly microcephalic. You are meeting with them today to discuss their daughter’s symptoms.

Family History – 2

Referral Reason
Melissa and Nick are the parents of a 4 yr old little boy who are here today to discuss his history of severe seizures and developmental delay. This is the first and only child for both.

Medical History/Background
Melissa and Nick mention that David has been having seizures for the past 8 months. They do not believe they were brought on by any type of fever or injury. Medications so far have helped but they are concerned about their son’s development as he is globally delayed.

Currently, David has about 100 words but, one can only understand 20% of them. He communicates primarily by pointing. He has some behavioral problems, he has difficulty walking, he is not able to feed himself, and he is not potty trained.

Family History – 3

Referral Reason
Luis and Sarah have brought in their 4 year old daughter to discuss her diagnosis of Pierre Robin Sequence

Medical History/Background
Lisa was diagnosed with Pierre Robin sequence at birth. However the family was never evaluated by genetics. She is generally in good health. She has some difficulties with her cleft palate repair at 8 months of age but is doing better now. She has mild hearing loss but is seen on a semi-annual basis by Audiology. Family would like information on whether or not they could have another child with the same issues.

Family History – 4

Referral Reason
Tamara and Carter have a 3 year old son with developmental delay. He has been delayed in all of his gross motor skills and has been unsteady on his feet since he learned how to walk. He has some difficulty with language but is currently in speech therapy which is helping. While watching him in the room you notice his calves look rather large for a boy his age and he has difficulty getting up to play.

Medical History/Background
He has been delayed in all of his gross motor skills and has been unsteady on his feet since he learned how to walk. He has some difficulty with language but is currently in speech therapy which is helping. While watching him in the room you notice his calves look rather large for a boy his age and he has difficulty getting up to play.
Case Work-Up

Referral Reason
Tyler and Rebecca are a married couple who are visiting genetics today to discuss their daughter (3 months).

Medical History/Background
Rebecca had been having difficulty conceiving, and has had 3 first trimester miscarriages. After a routine work-up at a fertility specialist it was determined that Rebecca had a balanced translocation between chromosomes 11 and 22. Though they were told it would be difficult to conceive Rebecca and Tyler were able to get pregnant. Rebecca recently gave birth to a little girl who has been having trouble feeding, has a cleft palate, and is slightly microcephalic. You are meeting with them today to discuss their daughter’s symptoms.

Family History
- Rebecca and Tyler are first cousins; Rebecca’s mother and Tyler’s father are brother and sister.
- Rebecca has two sisters, one of which is her identical twin, and one brother. Both of her parents are deceased, but both sets of grandparents are alive and well and have no reported health problems. Ethnicity is reported to be German.
- Tyler has two brothers, although one is a half brother through his father. He does not know much about his paternal family history, only that his father’s parents are alive. His mother’s parents are still alive and have no reported health concerns. Ethnicity is reported to be German.

Assignment
1) Draw the appropriate pedigree for this family history
2) What is the cause behind Rebecca’s miscarriages? Is consanguinity a factor?
3) Should other family members be tested for the same balanced translocation and why?
4) Is there a syndrome associated with this translocation?
5) What is your differential diagnosis for the patient?

Case Work-Up II

Referral Reason
Melissa and Nick are the parents of a 4 yr old little boy who are here today to discuss his history of severe seizures and developmental delay. This is the first and only child for both.

Medical History/Background
Melissa and Nick mention that David has been having seizures for the past 8 months. They do not believe they were brought on by any type of fever or injury. Medications so far have helped but they are concerned about their son’s development as he is globally delayed.

Currently, David has about 100 words but, one can only understand 20% of them. He communicates primarily by pointing. He has some behavioral problems, he has difficulty walking, he is not able to feed himself, and he is not potty trained.

Family History
- Melissa: Is 30 yrs old and does not report any major concerns about her health. **Though when you see her you notice that she has a hypo pigmented spot on her arm**. She has one brother who is 28 and has a history of seizures. He does not have kids and just found out that he is unable to do so. She has 25 year old twin sisters. One has a son who is David’s age and the other has identical twin girls who are 10. Melissa’s parents are first cousins: her mother’s father
and her father’s mother are brother and sister. She reports that only her great grandparents (maternal and paternal) are deceased. Family history is Iranian.

- Nick: Is a 32 yr old who reports that he has a history of renal cysts and retinal hamartomas. He is now in good health and has not had any concerns for his health in the past years. He has one sister who is Melissa’s age, she also has renal cysts and a benign heart tumor as a child. She does not have any children (by choice). Nick reports that his parents died when they were in their 50s due to a car accident. He does not know much about their medical history, only that his mother also had renal cysts and his father had diabetes type II. Family history is German.

Assignment
6) Draw the appropriate pedigree for this family history
7) What is your differential diagnosis for the patient?
   1. Is there one syndrome that you believe is the diagnosis?
8) What genetic tests or imagining studies would you order and why?
   9) If the testing were to come back positive which family member would you test next and why? Would it even be necessary to test other family members?

Understanding Terminology

Understanding the different terminology used to describe genetic syndromes and mutations can be difficult at first. To help make this process easier please look up the following terminology in your Rotation Manual and list 3-5 syndromes that are examples of each term. You can only use a syndrome twice and you cannot use the example below for Variable Expressivity.

*Please list the Syndrome, Gene(s), and Recurrence Risk
   Ex: Variable Expressivity - Tuberous Sclerosis Complex, TSC1 & TSC2, RR=50%

- Autosomal
  - Dominant
  - Recessive
- Complete Penetrance
- Incomplete Penetrance
- Variable Expressivity
- X-Linked
  - Dominant
  - Recessive
- Mitochondrial
- Multifactorial
- Anticipation
- Deletion
- Duplication
- Single Gene Disorders
Useful Websites

OMIM

Genetics Home Reference

GeneReviews

PubMed
Example Pedigree

Indication: Symptoms or Dx of pt

Obtained by: Your Name
Informant: Mom, Dad, Adoptive, etc

Gerran
Irish

Ethnicity: See above
Consanguinity: Y/N
SABs/stillbirths/NDs: fill in #
MR/genetic diseases: fill in #
BDS: fill in #

The Children's Hospital

Genetics Pedigree (Protected Encounter)

Patient + Sticker
Example

Obtained by: Deanna R. Barnes, MS
Informant: Parents

Ethnicity: 
Consanguinity: 
SA(b)S: stillbirths/deaths; LD/MR/other genetic diseases: 
BDs: 

The Children's Hospital

OmniPedigree (Protected Encounter)

Genetics Pedigree – Page 1 of 1
Form #: (1008)