

**PEDIATRIC NEUROLOGY RESIDENCY TRAINING MANUAL**  
**Version 1.7-2007**

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**Introduction**

This manual is meant to serve as a guidebook for what to expect during your three years of training. As a residency training program, there are certain guidelines for your training that must be met so that at the end of it all you are qualified to not only sit your board exams, but to individually and competently attend to the neurological disorders of childhood. It is our goal to ensure that you are successful in these regards. Our training program is regularly reviewed by the ACGME to ensure that we are meeting certain standards in these regards. This is known as the accreditation process. As such, they have published guidelines for programs in child neurology. You are referred to them as the ultimate source (<http://www.acgme.org/req/185pr999.asp>). This guidebook represents our attempts to implement them in a meaningful way that reflects our vision of what a child neurology training program should be.

Other materials that are necessary for reference include the training manual for the adult neurology core program of which we are a part. It is important to remember that we are a part of this program and that participation in certain elements organized by the adult neurology core program is required for completion of the pediatric neurology program. Our program also has ties to the Pediatric residency program from which our program receives approval and support.

Important supplemental material to this manual is also contained in the *University of Colorado House Staff Manual. The Resident and Fellow Guide from Children's Hospital* contains information that is important for your function at Denver Children's Hospital. The electronic form of this manual will be maintained on the pediatric neurology website.

**We require that all residents read this manual. To verify that you have received and read the manual, please sign both cover sheets and have the Child Neurology Residency Coordinator initial them. One will be kept in your file. Please keep one for your records.**

Thanks for your cooperation and good luck in your training.

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Resident Signature

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Date

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Coordinator's Initials

(Department Copy)

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**Special notice required by ACGME:**

At the 5/17/2007 meeting of the RRC for Neurology the following action was taken:

The program was re-accredited for 4 years until May, 2011.

**The Review Committee commended the program for its demonstrated substantial compliance with the ACGME's Requirements for Graduate Medical Education.**

However, the Committee cited the following areas as not in compliance:

**Citation #1**

It remains to be demonstrated the goals and objectives include specific goals and objectives for each level of training in each rotation. The program must prepare a written statement that outlines its educational goals with respect to the knowledge, skills, and other attributes of residents for each major assignment and for each level of the program. This statement must be distributed to residents and faculty, and must be reviewed with residents prior to their assignments. All educational components of a residency program should be related to program goals.

**Citation #2**

The documentation provided for the prerequisite pediatrics training is inadequate. The program director must review and determine the acceptability in the initial two years of training.

**Citation #3**

Ancillary support services are not adequate. It is reported that residents perform services that should be done by support staff.

**Citation #4**

It is unclear if the psychiatry experience provided is the equivalent of a full month rotation, in that there is no specific designated psychiatry rotation in the block diagram.

**Citation #5**

There is no evidence that residents will be provided exposure to periodic seminars, journal clubs, lectures in basic science, and didactic courses. The responsibilities in basic sciences are poorly defined.

**Citation #6**

It is unclear that the resident attendance for program conferences is mandatory or how the attendance is monitored at these conferences.

**Citation #7**

It is not evident that progressive responsibility is clearly defined. Program must provide opportunities for increasing responsibility and professional maturation of residents.

**This manual is organized as follows:**

- 1) Resident Selection Criteria**
- 2) Outline of Residency Program**
  - a. Structure**
  - b. Goals and objectives of each year and major rotations**
- 3) Requirements for promotion and completion of the program**
  - a. Core competencies**
  - b. Resident evaluation and documentation**
  - c. Program evaluation by the resident**
- 4) Evaluation of rotations and faculty by residents.**
- 5) Resident dismissal policies and procedures**
- 6) Supervision policy for each level of training and care of patients**
- 7) Substance abuse policy**
- 8) Moonlighting policy**
- 9) Leave and vacation policy**
- 10) Board examinations**
- 11) Program directors duties and responsibilities**
- 12) Special topics: bioethics, palliative care and psychosocial support of families.**

**Appendix 1: Description of Clinical Services**

**Appendix 2: List of Faculty**

**Appendix 3: Core competencies**

**Appendix 4: UCHSC Duty Hours Policy**

**Appendix 5: Managing stress and fatigue a power point presentation available separately**

**Appendix 6: Sample evaluation form**

**Appendix 7: ABPN Clinical Skills Evaluation Requirements and Scoring Criteria  
(Evaluation Forms are available from the coordinator)**

## 1) Residency Selection Criteria

Our program is currently approved to accept two trainees per year. As such, our program often has a difficult time in selecting the best candidates from many qualified candidates who apply. Listed below are our criteria for interview and selection.

### Child Neurology Resident Recruitment and Selection Criteria

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.

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:

2 years of residency training in pediatrics in the United States or Canada;

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

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 selects residents through the San Francisco Matching Program. Application forms, deadlines (typically late August or early September), fees are available on their website ([www.sfmatch.org](http://www.sfmatch.org)).

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:  
[www.uchsc.edu/peds/subs/neuro/educat/fellows.htm](http://www.uchsc.edu/peds/subs/neuro/educat/fellows.htm).

## 2) Outline of Residency Program

### *General Principles*

The program is set up to complete the length 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, neurologic 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 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 (monthly) 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, neuroimmunology, infectious diseases, neuromuscular diseases, rehabilitation, clinical neurophysiology and pain management.

## General Program Structure

1st Year

### PG 3

Per the adult neurology 1<sup>st</sup> year core. Typically: 7 months: Adult Neurology inpatient ward service at University, VA & Denver Health Center  
5 months: Adult Neurology ambulatory services at University and VA Hospitals  
Call schedule typically every 4th night in house.  
Continuity Clinic in Child Neurology at TCH; one-half day weekly, mandatory attendance

2nd Year

### PG 4

Child Neurology inpatient & emergency consult service: 3 months.  
Core Electives (neurophysiology, neuroradiology, neuropathology): 6 months.  
Rotating clinics (child neurology, genetics, rehabilitation, neuromuscular, development, psychiatry): 3 months.  
Continuity clinic in Child Neurology at TCH; one-half day weekly, mandatory attendance.

3rd Year

### PG 5

Child Neurology inpatient & emergency consult service: 3 months.  
Electives (research, outpatient/inpatient clinical): 6 months.  
Rotating clinics (child neurology, genetics, rehabilitation, neuromuscular, development, psychiatry): 3 months.  
Continuity clinic in Child Neurology at TCH; one-half day weekly, mandatory attendance

Above is structured to meet 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. 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."

In ACGME block diagram form:

**BLOCK ROTATIONS – Program Year 1-PGY3**

July	August	September	October	November	December	January	February	March	April	May	June
Adult Neurology DHMC	Adult Neurology DHMC	Adult Neurology UCH	Adult Neurology UCH	Adult Neurology UCH	Adult Neurology DHMC	Adult Neurology UCH subspecialty clinics	Adult Neurology DHMC	Adult Neurology UCH subspecialty clinics	Adult Neurology DHMC	Adult Neurology UCH	Adult Neurology DHMC

**LONGITUDINAL EXPERIENCES - Program Year 1**

Type Of Experience*	Weekly Structured	Number Of Weeks	Amount Of Time (FTE)
Child Neurology Continuity Clinic (TCH)	½ day each week	48 per year	24

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

July	August	September	October	November	December	January	February	March	April	May	June
Neurophysiology-TCH	Neurophysiology-TCH	Neuroradiology-TCH	Neuroradiology-TCH	Neuropathology-TCH	Neuropathology-TCH	TCH-Inpatient Service	TCH-Outpatient Service	TCH-Inpatient Service	TCH-Outpatient Service	TCH-Inpatient Service	TCH-Outpatient Service

**LONGITUDINAL EXPERIENCES – Program Year 2**

Type Of Experience*	Weekly Structured	Number Of Weeks	Amount Of Time (FTE)
Child Neurology Continuity Clinic (TCH)	½ day each week	48 per year	24
Psychiatry: Child Psychiatry clinic (TCH)	½ day each week during outpatient months	12	6
Psychiatry: Child Developmental Disorders and Behaviors clinic (TCH)	½ day each week during outpatient months	12	6
Genetics clinic (TCH)	½ day each week during outpatient months	12	6
Rehabilitation/MDA clinic (TCH)	½ day each week during outpatient months	12	6

**BLOCK ROTATIONS - Program Year 3-PGY5**

July	August	September	October	November	December	January	February	March	April	May	June
TCH- Inpatient Service	TCH- Outpatient Service	TCH- Inpatient Service	TCH- Outpatient Service	TCH- Inpatient Service	TCH- Outpatient Service	Elective- Research or Community or Multi- specialty Clinics	Elective- Research or Community or Multi- specialty Clinics	Elective- Research or Community or Multi- specialty Clinics	Elective- Research or Community or Multi- specialty Clinics	Elective- Research or Community or Multi- specialty Clinics	Elective- Research or Community or Multi- specialty Clinics

**LONGITUDINAL EXPERIENCES - Program Year 3**

Type Of Experience*	Weekly Structured	Number Of Weeks	Amount Of Time (FTE)
Child Neurology Continuity Clinic (TCH)	½ day each week	48 per year	24
Psychiatry: Child Psychiatry clinic (TCH)	½ day each week during outpatient months	12	6
Psychiatry: Child Developmental Disorders and Behaviors clinic (TCH)	½ day each week during outpatient months	12	6
Genetics clinic (TCH)	½ day each week during outpatient months	12	6
Rehabilitation/MDA clinic (TCH)	½ day each week during outpatient months	12	6

## Program

### Specifics

#### PG 3-5:

Continuity clinic will be attended weekly for ½ session 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.

#### 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.

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.

#### PG4:

The first 6 months of the training are dedicated to child neurology basic skills. One to two months are spent with the neuropathology service, two months with the neuroradiology service and two months with electrophysiological services.

### Goals and Objectives for Basic Skill Rotations

#### 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.*

#### 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 and various modalities and arteriography.*

#### 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.*

The second 6 months begin monthly alternation between the inpatient service (3 months) and the outpatient rotating clinic schedule (3 months). During months on the inpatient service, clinical duties will include consultations to the medical, surgical and psychiatric services. Duty hours are noted below. Supervision depends on year in training and is noted below. During months on the rotating outpatient clinic schedule, a weekly schedule (subject to timing but not content changes) is as follows:

	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>AM</b>	Continuity Clinic	Neurology	Psych Child Developmental Disorders and Behaviors clinic	Metabolic Clinic	Neuromuscular/Rehab
<b>PM</b>	Genetics and NF Clinic	Neurology	Didactic afternoon	Psychiatry: Child Psychiatry clinic)	Neuromuscular/Rehab

In the past, this schedule has not been so rigorous and has depended on the number of trainees. Regardless, objectives are met (as noted in *Numbers* below) by dedicating whole months, if necessary, to meet requirements. Thus, the program is flexible.

### **Goals and objectives for Outpatient Child Neurology Clinic Rotations**

#### Genetics clinic

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. Counseling genetic diagnoses.

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 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.

#### 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. Supervision is by Psychiatry staff. Residents are to participate as psychiatry fellows in this discipline and are responsible for seeing new outpatient consultations as well as follow-up visits.

#### 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 neuroeducational testing. Obtaining developmental and behavioral history.

Assessment of competence: Direct observation by 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 outpatient 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.

### **Goals and Objectives of Inpatient Child Neurology Rotations**

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, 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.

PG5:

The first 6 months continue monthly alternation between the inpatient service (3 months) and the outpatient rotating clinic schedule (3 months). (see PG4). The second 6 months of the training are dedicated to child neurology 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.

Electives are approved and discussed with the program director at least 4 weeks prior to their commencement 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.

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

Broadly, residents will acquire progressive responsibility as the program progresses; 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 and treatment options for 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) 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 **Requirements**).

Knowledge gained with each year of training:

- 1) Recognition of common neurological diseases in childhood and their differential diagnosis.
- 2) Competency in performing physical 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.

Assessment of competence with each year of training:

Residents will be evaluated on a formal basis semi-annually with a document that indicates attainment of skills and progression to the next year of training. A sample form is in Appendix 6.

### **Numbers necessary to meet requirements.**

In order to meet requirements, several calculations are noted. One month is equivalent to 40 ½ day sessions.

For psychiatry, one month full time equivalent (FTE) is required. Thus: 6 months of rotating clinic x 4 weeks/month x 2 sessions/week = 48 sessions (40 required).

For child neurology outpatient, 4 months FTE is required. Thus: 6 months of rotating clinic x 4weeks/month x 4 sessions/week = 96 sessions. Including continuity clinic: 3 years x 52 weeks/year x 1 session/week = 156 sessions. Total sessions = 252 sessions (160 required).

For child neurology 12 month FTE total is required. Thus 252 sessions of outpatient + 6 months inpatient x 40 sessions/month = 492 sessions (480 required).

## **Call and duty hours**

Overnight call during the final 2 years will be from home and will average every 3<sup>rd</sup> or 4<sup>th</sup> night. Residents will always have teaching faculty available while on call. Resident participation and management of acutely ill pediatric patients in the emergency room or ICU is essential and may be necessary any hour of the day. At least 1 full day out of 7 on average will be away from the hospital. Resident work hours are restricted to less than 80 hours per week.

The call schedule at The Children's Hospital will be determined by the senior child neurology resident and the chief adult neurology resident.

## **Resources**

An office desk-space is dedicated to each child neurology resident, with access to a networked computer. Networked computers have access to 1) laboratory, radiological, pathological, and electrophysiological studies 2) dictated consultation reports 3) vital signs and statistics 4) radiological images and 5) library resources. Online library resources include access to PubMed and a full complement of journals and texts. Library facilities are available 24 hours/day in The Children's Hospital. After-hours access requires entry through security. Library facilities at the School of Medicine are available as well. Approximately \$100 per year is provided by the GME office for books. Approximately \$800 per year may be provided by the Neurology Department for travel to a meeting, depending on whether the resident presents a poster or talk at the meeting. Conference attendance by Child Neurology Residents must be approved in advance by the Program Director. Funding to attend is solely at Director's discretion.

## **3) Requirements for promotion and completion of the program**

1) Satisfactory completion of curricular activities. Residents are instructed and evaluated with documentation by faculty in the following arenas:

History taking

Organizing and recording data

Using the history and data to form a differential diagnosis and plan

Attainment of Core competencies—see attached appendix 3.

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

3) Attendance at the pediatric neurology journal club. Attendance will be monitored.

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

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

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

7) Attendance at weekly neurosurgical/neuroradiological/neurooncology case conferences to participate in the evaluation and management of neurosurgical diseases in children. Attendance will be monitored.

8) Regular participation in the rotating clinics: child neurology, genetics, muscle, rehabilitation and development (see *Outline of Program* above).

9) Attendance at conferences offered addressing bioethics, palliative care, pain relief, and cost-effective medical management. Attendance will be monitored.

- 10) Participation in teaching of other residents, medical students and allied health care personnel. Teaching will be evaluated by teaching staff.
- 11) Satisfactory professional and ethical behavior throughout the training program. These attitudes and behaviors are described in the UCHSC House Staff Manual and the TCH Manual for Residents and Fellows.
- 12) Satisfactory performance on the residency in-service training exam.
- 13) Presentation of at least one M&M during the residency
- 14) Successful completion of at least one scholarly activity, i.e, a poster, a research project, an original research paper, etc.
- 15) Successful completion of the following ABPN exam requirements:

Part II exam will be will take place in the training program and Documentation must be submitted with Application for Certification that the evaluations have taken place

Child Neurology Residents must be evaluated by a total of three (3) ABPN Board Certified Faculty members for competency in :

- A. Medical interviewing
- B. Neurological examination
- C. Humanistic qualities, professionalism, and counseling skills

Competency will be determined by the evaluation of five (5) patients as follows:  
Child Neurology Residents

- 1) Critical care: One critically ill child patient with neurological disease (may be in either an intensive care unit or emergency department setting or an emergency consultation from another inpatient service)
- 2) Neuromuscular: One child patient with a neuromuscular disease (may be in either an inpatient or outpatient setting)
- 3) Ambulatory: One child patient with an episodic disorder, such as seizures or migraine (most likely in an outpatient setting)
- 4) Neurodegenerative: One child patient with a neurodegenerative disorder, such as an inherited degenerative disease (most likely in an outpatient setting)
- 5) Adult patient: One adult patient with a neurological disorder (most likely in an outpatient setting) This evaluation must be conducted by an Adult Neurologist

At least one of the above child patients must be:

- An infant or child aged younger than two
- A child aged six to ten
- An adolescent (aged 11 – 15)

The selection of patients (outlined above) by type and age is at the discretion of the residency director.

*Please see Appendix 7 for complete APBN evaluation requirements, scoring criteria and evaluation forms.*

Residents are evaluated at least monthly by teaching faculty and these evaluations are placed in a confidential file that is accessible to the resident (see point 1). 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 to be evaluated by other members of the child neurology staff including nurses, technicians, and support staff. In future, evaluations will include those from patients and families.

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 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 by the program director semiannually, 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 and 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.

A sample form is attached in Appendix 6.

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

#### **4) Evaluation of faculty and rotations by residents.**

Residents are always encouraged to provide feedback on the program. Residents are provided an opportunity to do this formally on an annual basis. Evaluations are kept with the programs records. An anonymous/on-line evaluation tool is currently being implemented. Monthly faculty meetings of the teaching staff have time to address the residency program; resident participation in these meetings when confidential matters are not being discussed is encouraged.

The Training Director serves as the primary contact and means of resolving any problem issues as they arise.

#### **5) Probation and dismissal from the program**

1. After review by the chairperson, program director, and other faculty members, a resident who has received two or more substandard evaluations in a six-month period may be placed on probation.
2. If a resident is placed on probation, and does not improve his/her performance within a prescribed period of time (typically three months), he/she will be dismissed from the program.
3. If a resident commits an offense which is grossly detrimental to his/her patients, other residents, staff or faculty (e.g., assault of a patient), he/she may be dismissed without first being placed on probation.

4. Inadequate chart maintenance and documentation may result in probation.
5. Failure to attend required conferences/lectures (attendance monitored) is grounds for dismissal. Please refer to conferences above. A resident who misses a combined 7 of these conferences without cause (e.g., illness) within one year will be placed on probation. If placed on probation for missing conferences, missing three more of these conferences within the year (for a total of 10 misses) will result in expulsion from the program.
6. Unexcused absences from work are considered grounds for probation.
7. Residents on probation are not allowed to moonlight, as per the standard contract.
8. Residents placed on probation will be given a remediation program, supervised by a defined faculty mentor.

#### **6) Supervision policy for each level of training and care of patients**

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.

During the 2<sup>nd</sup> 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.

During the 3<sup>rd</sup> year (PG-5), residents are expected to triage all after-hours calls with the attending within the next 24 hours, depending on patient acuity.

#### **7) Substance abuse policy**

Substance abuse policy is as per UCHSC residency program guidelines.

#### **8) Moonlighting policy**

Moonlighting policy is as per adult neurology core guidelines. Moonlighting is not permitted if on probation.

#### **9) Leave and vacation policy**

Leave and vacation policy is as per adult neurology core guidelines and formed in conjunction with neurology resident call scheduling. Generally, vacation should be planned at least 4 months in advance so that clinic scheduling can be arranged.

#### **10) Board examinations**

Board examinations for Certification with Special Qualification in Child Neurology offered by the ABPN are offered through the ABPN. Typically registration occurs Dec/Jan prior to completing the program. Trainees are responsible for applying in a timely fashion—some

forms/letters will need to be provided by the training director. Further information is available on the ABPN website. Board certification in Pediatrics is possible after completing the program if trainees only complete 2 years of pediatrics. Alternative timing is possible and would have to be arranged for trainees who have completed 3 years of pediatrics prior.

Pass rates for trainees in the past 5 years have been excellent (100%).

## **11) Program Director's Responsibilities**

The program director is committed to ensuring that your residency experience is a positive one and is committed to meeting the following objectives:

### **Monitoring residents' stress and remediating it if necessary.**

Providing a sufficient amount time to run the program

Monitoring the content and quality of the program

Providing residents with this guidebook

Selecting new residents

Selecting teaching staff

Guaranteeing that there is always teaching staff on call for residents. In an emergency, the director will be available 24/7.

Evaluating residents and maintaining the monthly records that evaluate your progress.

Meeting with residents individually semi-annually to review a written progress summary that both the director and the resident sign. Residents may append a written statement to this summary. These records are available to residents at anytime.

Promoting residents as they progress.

Seriously reviewing resident evaluations of the program and acting on concerns if necessary.

Following institution guidelines for grievances and complaints.

Fulfilling ACGME/RRC mandates and keeping the program accredited.

## **12) Special topics**

Residents are required to receive instruction in the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for children with neurological disorders. Related to this, residents must receive instruction in appropriate and compassionate methods of terminal palliative care, including adequate pain relief, psychosocial support and counseling of families.

Frequently these issues are discussed as part of rounds and in patient care conferences. The University of Colorado and The Children's Hospital have frequent Ethics and related seminars and symposia. While attendance at these is not required, it is encouraged when possible.

In order to supplement this training, on-line self-study modules are required viewing by residents. Assessment of participation is part of the semi-annual review process.

### **Bioethics**

<http://www.cme.utoronto.ca/endoflife/Modules/PEDIATRIC%20EOL%20DECISION-MAKING%20MODULE.pdf>

<http://aappolicy.aappublications.org/cgi/reprint/pediatrics;98/1/149.pdf>

### **Palliative care**

<http://www.jasonprogram.org/teaching.htm>

Modules on:

Pain management, communicating bad news, whole patient assessment

## Appendix 1: Program Statistics

The information contained in the tables provides information about the size of the clinical service. The Child neurology clinical service is a clinically active, integrated service providing inpatient and outpatient care, and serves as a referral center for a multistate region. This should be viewed as a collaborative experience with all the attendings.

### CLINICAL TEACHING - INPATIENT

	TCH
<b>1. BED CAPACITY</b>	
Child neurology beds (assigned or available)	250
<b>2. ADMISSION DATA (past year)</b>	
Total admissions to child neurology service	835 total (293 admitted to neurology service)
Percent teaching (with resident participation)	100%
Average daily census/child neurology	7
<b>3. AVERAGE MONTHLY TEAM SIZE</b>	
Child neurology residents	1
Rotating residents	1-3
Students	0-1

### **CLINICAL TEACHING - OUTPATIENT**

The majority of patient care delivered by the neurology service occurs in the pediatric neurology clinic. This clinic cares for a variety of patients and diagnosis patients with a variety of minor neurological conditions to patients with severe disorders of the nervous system. The experience provided in this clinic is a vital foundation to modern medical practice that is increasingly focused on outpatient delivery of care. The clinic activities provide exposure to specialized management of seizure patients in committed epilepsy clinics and provide a strong foundation to the skills of EEG interpretation. The goal of the TCH clinical year is to provide a strong background for a career in pediatric neurology.

Number of clinics per month	40	
Average number of visits per month	481	
Average number of new patients per month	160	
Percent visits seen by child neurology residents	14%	
Average number of child neurology residents per clinic	1-2	
Duration of child neurology residents assignment to clinic	12 mos	
Average number of attendings in child neurology resident clinics	2-3	
Average number of child neurology residents in attending clinics	1-2	

## Appendix 2: Child Neurology Teaching Faculty and Associated Faculty with Areas of Special Interest and Expertise

Note: Adult Neurology teaching faculty listed in adult core training manual

### Teaching Faculty

#### **Amy–Brooks Kayal, MD**

Section Chief, Child Neurology  
Associate Professor of Pediatrics and Neurology  
Research: Epilepsy, GABA receptors

#### **Jennifer Armstrong Wells, MD, PhD**

Assistant Professor of Pediatrics  
Research: Pediatric stroke

#### **Daniel Arndt, MD**

Instructor of Pediatrics  
Research: Epilepsy, head trauma

#### **Timothy A. Benke, MD, PhD**

Associate Professor of Pediatrics, Neurology and Pharmacology  
Research: Synaptic development, neonatal seizures

#### **Timothy Bernard, MD**

Assistant Professor of Pediatrics, Neurology  
Research: Pediatric Stroke

#### **Richard Boda, PhD**

Assistant Professor of Pediatrics  
Clinical Neuropsychologist  
Research: Dyslexia

#### **Holly Briscoe, PNP**

Senior Instructor of Pediatrics

#### **Abigail Collins, MD**

Title: Instructor of Pediatrics  
Research: Movement Disorders

#### **Dee A. Daniels, NP**

Senior Instructor of Pediatrics

#### **Jennifer Flack, NP**

Instructor of Pediatrics

#### **Jennifer Janusz, PhD**

Assistant Professor of Pediatrics  
Clinical Neuropsychologist  
Research: Neurodegenerative disorders

#### **Kelly Knupp, MD**

Senior Instructor of Pediatrics and Neurology  
Research: Epilepsy

#### **Susan Koh, MD**

Associate Professor of Pediatrics  
Research: Epilepsy

#### **Pramote Laoprasert, MD**

Assistant Professor of Pediatrics and Neurology  
Research: Neuro-imaging and epilepsy

#### **Paul M. Levisohn, MD**

Associate Professor of Pediatrics and Neurology  
Research: Clinical trials in epilepsy

#### **Mary Anne Maddox, RN, MS, CPNP**

Senior Instructor of Pediatrics

#### **Jean Milholland, MS, PA**

Senior Instructor of Pediatrics

#### **Bradford R. Miller, MD**

Senior Instructor of Pediatrics and Neurology

#### **Paul G. Moe, MD**

Professor of Pediatrics and Neurology  
Research: Spikeware stupor, infantile opsoclonus,-myoclonus

#### **Kristen Park, MD**

Instructor of Pediatrics  
Research: Epilepsy

#### **Julie A. Parsons, MD**

Child Neurology Residency Program Director  
Assistant Professor of Pediatrics  
Research: Muscle disorders, movement disorders

#### **Tonia M. Sabo, MD**

Assistant Professor of Pediatrics  
Research: Clinical trials in headache

**Scott Turner, PNP**  
Senior Instructor of Pediatrics

**Andrew White, MD, PhD**  
Assistant Professor of Pediatrics  
Research: Epilepsy

**Audrey S. Yee, MD**  
Assistant Professor of Pediatrics  
Research: Epilepsy

**Greta N. Wilkening, PsyD**  
Associate Professor of Pediatrics  
Clinical Neuropsychologist

### **Associated Faculty**

**Ann Reynolds, M.D.**  
Asst. Professor of Pediatrics  
Developmental Pediatrics

**John Strain, M.D.**  
Professor of Radiology  
Neuroradiology

**Bette Kleinschmidt-DeMasters, M.D.**  
Professor of Pathology

**Dennis Matthews, M.D.**  
Medical Director  
Rehabilitation Service, TCH

**Pamela Wilson, M.D.**  
Professor of Pediatrics

**Debbie Carter, M.D.**  
Asst. Professor of Psychiatry  
Child Psychiatry

**Brian Stafford, MD**  
Asst Prof of Psychiatry  
Child Psychiatry

**Nick Foreman, M.D.**  
Asst. Professor of Pediatrics  
Neuro-oncology

**David Manchester, M.D.**  
Prof of Pediatrics  
Genetics

**Anne Tsai, M.D.**  
Asst. Prof of Pediatrics  
Genetics-Metabolics

### Appendix 3: Core Competencies

Assessment of core competencies is a metric to determine whether a resident is attaining the skill required to attain sufficient professional ability to practice competently and independently child neurology when the program is completed. These have been established by the AAN Consortium of Residency Program directors. They are currently being incorporated into the evaluations of residents by teaching faculty. The full list is available online: [www.aan.com/students/program/psychiatry\\_and\\_neurology.pdf](http://www.aan.com/students/program/psychiatry_and_neurology.pdf)

#### Psychiatry and Neurology Core Competencies

- I. Patient Care
  - A. General: The physician shall demonstrate the following abilities:
    1. To perform and document a comprehensive history and examination to include as appropriate:
      - a. Chief complaint
      - b. History of present illness
      - c. Past medical history
      - d. Review of systems
      - e. Family history
      - f. Social history
      - g. Developmental history (especially for children)
    2. To create differential diagnoses
    3. To evaluate, assess, and recommend cost-effective management of patients
  - B. For Neurology: Based on a comprehensive neurological assessment, the physician shall demonstrate the following abilities:
    1. To determine:
      - a. If a patient's symptoms are the result of a disease affecting the central or peripheral nervous system or are of another origin
      - b. A formulation, differential diagnosis, laboratory investigation, and management plan
    2. To develop and maintain the technical skills to:
      - a. Perform lumbar puncture, edrophonium, and caloric testing
      - b. Identify and describe abnormalities seen in common neurological disorders on radiographic testing, including plain films, myelography, angiography, CT, isotope, MRI, and PET/SPECT imaging of the neuraxis
      - c. Evaluate the application and relevance of investigative procedures and interpretation in the diagnosis of neurologic disease, including the following:
        - 1) Electroencephalogram
        - 2) Motor and sensory nerve conduction studies
        - 3) Electromyography
        - 4) Evoked potentials
        - 5) Polysomnography
        - 6) Electronystagmogram
        - 7) Audiometry
        - 8) Perimetry
        - 9) Psychometry
        - 10) CSF analysis
        - 11) Vascular imaging (Duplex, transcranial Doppler)
        - 12) Radiographic studies as outlined above.
      - d. Identify and describe gross and microscope specimens taken from the normal nervous system and from patients with major neurologic disorders.

3. To recognize and treat neurological disorders.
- II. Medical Knowledge
- A. General: The physician shall demonstrate the following:
    1. Knowledge of major disorders, including:
      - a. The epidemiology of the disorder
      - b. The etiology of the disorder, including medical, genetic, and social factors
      - c. The phenomenology of the disorder
      - d. Diagnostic criteria
      - e. Effective treatment strategies
      - f. Course and prognosis
    2. Knowledge of administrative medicine and health care delivery systems
    3. Knowledge of ethics
    4. Ability to reference and utilize electronic information systems to access medical, scientific, and patient information
  - B. For Neurology: The physician shall demonstrate knowledge of the following:
    1. Basic neuroscience that would be critical to the practice of neurology
    2. Pathophysiology of major psychiatric and neurological disorders and familiarity with the scientific basis of neurological diseases, including:
      - a. Neuroanatomy
        - 1) Cerebral cortex
        - 2) Connecting systems
        - 3) Basal ganglia/thalamus
        - 4) Brainstem
        - 5) Cerebellum
        - 6) Cranial nerves
        - 7) Spinal cord
        - 8) Spinal roots/peripheral nerves
        - 9) Ventricular system/CSF pathways
        - 10) Vascular
        - 11) Neuromuscular junction/muscles
        - 12) Autonomic nervous system
        - 13) Embryology
        - 13) Pain pathways
        - 14) Radiologic anatomy/cerebral blood vessels (angio or MRA)
      - b. Neuropathology
        - 1) Basic patterns of reaction
        - 2) Cerebrovascular disease
        - 3) Trauma (cranial and spinal)
        - 4) Metabolic/toxic/nutritional diseases
        - 5) Infections
        - 6) Demyelinating diseases/leukodystrophies
        - 7) Neoplasms
        - 8) Congenital/developmental disorders
        - 9) Degenerative/heredodegenerative disorders
        - 10) Myopathies
        - 11) Peripheral nerve disorders
        - 12) Radiologic pathology pertinent to assigned pathology sections
      - c. Neurochemistry
        - 1) Carbohydrate metabolism
        - 2) Lipid metabolism
        - 2) Protein metabolism
        - 3) Neurotransmitters
        - 4) Axonal transport
        - 5) Energy metabolism

- 6) Blood-brain barrier
- 7) Biochemistry of membranes/receptors/ion channels
- 8) Neuronal excitation
- 9) Vitamins (general aspects)
- 10) Inborn errors of metabolism
- 11) Electrolytes and minerals
- 12) Neurotoxins
- 13) Free radical scavengers
- 14) Excitotoxicity
- d. Neurophysiology
  - 1) Basic
    - a) Membrane physiology
    - b) Synaptic transmission
    - c) Sensory receptors and perception
    - d) Special senses
    - e) Reflexes
    - f) Segmental and suprasegmental control of movement
    - g) Cerebellar function
    - h) Reticular system/mechanisms of sleep and arousal/consciousness/circadian rhythms
    - i) Rhinencephalon/limbic system/the visceral brain
    - j) Learning and memory
    - k) Cortical organizations and function
    - l) Pathophysiology of epilepsy
    - m) Cerebral blood flow
    - n) Autonomic function
    - o) Blood-brain barrier
  - 2) Clinical
    - a) EEG
    - b) Evoked responses
    - c) EMG/nerve conduction studies
    - d) Sleep studies
- e. Neuropharmacology
  - 1) Anticonvulsants
  - 2) Antibiotics/antimicrobials/vaccines
  - 3) Antioxidants
  - 4) Neuromuscular agents
  - 5) Antidyskinetic drugs (including antiparkinsonians)
  - 6) Vitamins (clinical aspects)
  - 7) Analgesics (non-narcotics, narcotics, and other centrally active agents)
  - 8) Anticoagulants/antiplatelets/thrombolytic agents
  - 9) Hormones
  - 10) Autonomic agents
  - 11) Anticholinesterase drugs
  - 12) Neurologic side effects of systemic drugs
  - 13) Miscellaneous drugs
- f. Neuroimmunology/neurovirology
  - 1) Molecular pathogenesis of multiple sclerosis 2) Molecular neurology of prion diseases and slow viruses
  - 2) Immunology in MS/MG/other neurologic disorders
- g. Neurogenetics/molecular neurology and neuroepidemiology
  - 1) Mendelian-inherited diseases

- 2) Mitochondrial disorders
  - 3) Trinucleotide repeat disorders
  - 4) Channelopathies
  - 5) Genetics of epilepsy
  - 6) Molecular genetics of brain tumors
  - 7) Other genetic disorders/mechanisms
  - 8) Ischemic penumbra
  - 9) Molecular approaches to stroke therapy
  - 10) Polymerase chain reaction
  - 11) Risk factors in neurologic disease
  - 12) Demographics of neurologic disease
  - h. Neuroendocrinology
  - i. Neuroimaging
    - 1) Plain skull/spineradiology
    - 2) MRI MRV/MRA
    - 3) CT scan
    - 4) CT myelography
    - 5) Angiography
    - 6) SPECT/PET
  - j. Neuro-ophthalmology
    - 1) Vision and visual pathways
    - 2) Visual fields
    - 3) Pupils
    - 4) Ocular motility
    - 5) Fundi/retina/optic nerve
  - k. Neuro-otology
    - 1) Hearing/auditory function and testing 2) Vertigo/vestibular function and testing
  - l. Cerebrospinal fluid
    - 1) Normal CSF constituents and volume 2) Pathologic CSF patterns
      - a) Cellular
      - b) Chemical
      - c) Enzymatic
      - d) Serologic
  - m. Critical care and emergency neurology
  - n. Geriatric neurology
  - o. Headache and facial pain
  - p. Interventional neurology
  - q. Movement disorders
  - r. Neurological rehabilitation
  3. Patient evaluation and treatment selection, including:
    - a. The nature of patients' physical findings and the ability to correlate the findings with a likely localization for neurologic dysfunction
    - b. Likely diagnoses and differential diagnoses
      - 1) In Adults
      - 2) In Children
    - c. Planning for evaluation and management
    - d. Potential risk and benefits of potential therapies, including surgical procedures
- III. Interpersonal Communication Skills
- A. The physician shall demonstrate the following abilities:
    1. To listen to and understand patients
    2. To communicate effectively with patients, using verbal, non-verbal, and writing skills as appropriate

3. To develop and maintain a therapeutic alliance with patients by instilling feelings of trust, openness, rapport, and comfort in the relationship with the physician
  4. To use negotiation to develop an agreed upon health care management plan with patients
  5. To transmit information to patients in a clear, meaningful fashion
  6. To understand the impact of the physician's own feelings and behavior on treatment
  7. To communicate effectively and work collaboratively with allied health care professionals and with other professionals involved in the lives of patients
  8. To educate patients, professionals, and the public about medical, psychological, and behavioral issues
  9. To work effectively within multidisciplinary team structures as member, consultant, or leader
- B. The physician shall demonstrate the ability to elicit important diagnostic data and data affecting treatment from individuals from the full spectrum of ethnic, racial, gender, and educational backgrounds. This will include skills in tolerating and managing high levels of affect in patients.
- C. The physician shall demonstrate the ability to obtain, interpret, and evaluate consultations from other medical specialties. This shall include:
1. Formulating and clearly communicating the consultation question
  2. Discussing the consultation findings with the consultant
  3. Evaluating the consultation findings
- D. The physician shall serve as an effective consultant to other medical specialists, mental health professionals, and community agencies. The physician shall demonstrate the abilities to:
1. Communicate effectively with the requesting party to refine the consultation question
  2. Maintain the role of consultant
  3. Communicate clear and specific recommendations
  4. Respect the knowledge and expertise of the requesting party
- E. The physician shall demonstrate the ability to communicate effectively with patients and their families by:
1. Gearing all communication to the educational/intellectual levels of patients and their families
  2. Demonstrating cultural sensitivity to patients and their families
  3. Providing explanations of psychiatric and neurological disorders and treatment (both verbally and in written form) that are jargon-free and geared to the educational/intellectual level of patients and their families
  4. Providing preventive education that is understandable and practical
  5. Respecting the patients' cultural, ethnic, and economic backgrounds
  6. Developing and enhancing rapport and a working alliance with patients
- F. The physician shall maintain medical records that are legible and up-to-date. These records must capture essential information while simultaneously respecting patient privacy and be useful to health professionals outside psychiatry and neurology.
- G. The physician shall demonstrate the ability to effectively lead a multidisciplinary treatment team, including being able to:
1. Listen effectively
  2. Elicit needed information from team members
  3. Integrate information from different disciplines
  4. Manage conflict
  5. Clearly communicate an integrated treatment plan

- H. The physician shall demonstrate the ability to communicate effectively with patients and their families while respecting confidentiality. Such communication may include:
1. The results of the assessment
  2. Use of informed consent when ordering investigative procedures
  3. Genetic counseling and palliative care when appropriate
  4. Consideration and compassion for the patient in providing accurate medical information and prognosis
  5. The risks and benefits of the proposed treatment plan, including possible side-effects of medications and/or treatments
  6. Alternatives (if any) to the proposed treatment plan
  7. Education concerning the disorder, its prognosis, and prevention strategies

IV. Practice-Based Learning and Improvement

- A. The physician shall recognize and accept limitations in his/her own knowledge base and clinical skills, and understand the need for life-long learning.
- B. The physician shall demonstrate appropriate skills for obtaining up-to-date information from the scientific and practice literature and other sources to assist in the quality care of patients. This shall include, but not be limited to:
1. Use of medical libraries
  2. Use of information technology, including Internet-based searches and literature databases (e.g., Medline)
  3. Use of drug information databases
  4. Active participation, as appropriate, in educational courses, conferences, and other organized educational activities both at the local and national levels
- C. The physician shall evaluate caseload and practice experience in a systematic manner. This may include:
1. Case-based learning
  2. Use of best practices through practice guidelines or clinical pathways
  3. The review of patient records and outcomes
  4. Obtaining evaluations from patients (e.g., outcomes and patient satisfaction)
  5. Obtaining appropriate supervision
  6. Maintaining a system for examining errors in practice and initiating improvements to eliminate or reduce errors
- D. The physician shall demonstrate an ability to critically evaluate the relevant medical literature. This ability may include:
1. Using knowledge of common methodologies employed in psychiatric and neurological research
  2. Conducting and presenting reviews of current research in such formats as journal clubs, grand rounds, and/or original publications
  3. Researching and summarizing a particular problem that derives from the physician's caseload.
- E. The physician shall demonstrate the ability:
1. To review and critically assess the scientific literature to determine how quality of care can be improved in relation to one's practice (e.g., reliable and valid assessment techniques, treatment approaches with established effectiveness, practice parameter adherence). Within this aim, the physician shall be able to assess the generalizability or applicability of research findings to one's patients in relation to their sociodemographic and clinical characteristics.
  2. To develop and pursue effective remediation strategies that are based on critical review of the scientific literature.

V. Professionalism

- A. The physician shall demonstrate responsibility for his/her patients' care, including:
    - 1. Responding to patient communication
    - 2. Using medical records for appropriate documentation of the course of illness and its treatment
    - 3. Providing coverage if unavailable, e.g., out of town, on vacation
    - 4. Coordinating care with other members of the medical and/or multidisciplinary team
    - 5. Providing for appropriate transfer or referral if necessary
  - B. The physician shall respond to communications from patients and health professionals in a timely manner. If unavailable, the physician shall establish and communicate back-up arrangements. The physician shall communicate clearly to patients about how to seek emergent and urgent care when necessary.
  - C. The physician shall demonstrate ethical behavior and personal and professional attitudes of integrity, honesty, and compassion in the delivery of principal or consultative patient care.
  - D. The physician shall demonstrate respect for patients and colleagues as persons, including their ages, cultures, disabilities, ethnicities, genders, socioeconomic backgrounds, religious beliefs, political leanings, and sexual orientations.
  - E. The physician shall demonstrate a commitment to excellence in clinical practice through the establishment of life-long learning habits and continuing medical education, including:
    - 1. Regularly reviewing his/her own skills and knowledge
    - 2. Realizing limitations and developing strategies for overcoming them
    - 3. Responding positively to others' evaluations of professional performance
  - F. The physician shall ensure continuity of care for patients and, when it is appropriate to terminate care, does so appropriately.
  - G. The physician shall demonstrate appreciation of end-of-life care and issues regarding provision or withholding of care.
- VI. Systems-Based Practice
- A. The physician shall be able to articulate the basic concepts of systems theory and how it is used in psychiatry or neurology. The physician should have a working knowledge of the diverse systems involved in treating patients of all ages, and understand how to use the systems as part of a comprehensive system of care, in general, and as part of a comprehensive, individualized treatment plan. This will include the:
    - 1. Development of awareness of practice guidelines, community, national and allied health professional resources which may enhance the quality of life of patients with chronic psychiatric and neurological illnesses
    - 2. Development of the ability to lead and delegate authority to health care teams needed to provide comprehensive care for patients with psychological and neurological disease
    - 3. Development of skills for the practice of ambulatory medicine, including time management, clinic scheduling, and efficient communication with referring physicians
    - 4. Utilization of appropriate consultation and referral for the optimal clinical management of patients with complicated medical illness
    - 5. Demonstration of awareness of the importance of adequate cross-coverage and availability of accurate medical data in the communication with and efficient management of patients
  - B. In the community system, the physician shall:
    - 1. Recognize the limitation of resources for health care and demonstrate the ability to act as an advocate for patients within their social and financial constraints

2. Demonstrate knowledge of the resources available both publicly and privately for the treatment of psychiatric and neurological problems impacting a patient's ability to enjoy relationships and gain employment
  3. Demonstrate knowledge of legal aspects of psychiatric and neurological diseases as they impact patients and their families
- C. The physician shall demonstrate knowledge of and interact with managed health systems, including:
1. Participating in utilization review communications and, when appropriate, advocating for quality patient care
  2. Educating patients concerning such systems of care
- D. The physician shall demonstrate knowledge of community systems of care and assist patients to access appropriate care and other support services. This requires knowledge of treatment settings in the community, which include ambulatory, consulting, acute care, partial hospital, skilled care, rehabilitation, and substance abuse facilities; halfway houses; nursing homes; and home care and hospice organizations. The physician should demonstrate knowledge of the organization of care in each relevant delivery setting and the ability to integrate the care of patients across such settings.

## Appendix 4: UCHSC Duty Hours Policy

### Policy

The program policy on duty hours for residents follows the intent and language found in the Accreditation Council for Graduate Medical Education (ACGME) guidelines addressing this topic and is consistent with policy adopted by the Graduate Medical Education Committee. The program director and faculty will monitor the demands of at-home call and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.

### Duty Hours

- a. Duty hours are defined as all clinical and academic activities related to the residency program, ie, patient care (inpatient and outpatient), administrative duties related to patient care, the provision for transfer of patient care, time spent in-house during call activities and scheduled academic activities such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.
- b. Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities. {The "80" may be changed to reflect RRC requirements for <80 hours per week or RRC approval for > 80 hours per week}
- c. Residents must be provided with 1 day in 7 free from all educational and clinical responsibilities, averaged over a 4-week period, inclusive of call. One day is defined as one continuous 24-hour period free from all clinical, educational and administrative activities.
- d. Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time period provided between all daily duty periods and after in-house call.

### On-Call Activities

The objective of on-call activities is to provide residents with continuity of patient care experiences throughout a 24-hour period. In-house call is defined as those duty hours beyond the normal workday when residents are required to be immediately available in the assigned institution.

- a. In-house call must occur no more frequently than every third night, averaged over a four-week period.
- b. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may remain on duty for up to 6 additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics and maintain continuity of medical and surgical care (unless further limited by the relevant Program Requirements).
- c. An individual resident may accept no new patients after 24 hours of continuous duty.
- d. At-home call (pager call) is defined as call taken from outside the assigned institution.
  - 1) The frequency of at-home call is not subject to the every third night limitation. However, at-home call must not be so frequent as to preclude rest and reasonable personal time for each resident. Residents taking at-home call must be provided with 1 day in 7 completely free from all educational and clinical responsibilities, averaged over a 4-week period.
  - 2) When residents are called into the hospital from home, the hours residents spend in-house are counted toward the 80-hour limit.
  - 3) The program director and faculty will monitor the demands of at-home call and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.

### **Adult and Child Neurology Training Programs current implementation (July 2005)**

Following home call, if a resident has not had more than 4 hours of non-continuous rest, the resident may request to be relieved of duty at 1 pm the next day. This request **must** be made to the attending by 8am that day so that rounding on in-patients may be covered by 1pm and/or continuity clinic responsibilities may be met. The resident then either passes their pager to

another person designated to cover their calls or makes prior arrangements with the call operators. **Residents are reminded** that pagers are not for personal use since during these times such pages would be unnecessarily burdensome to the designee.

## Appendix 5: Fatigue Module Power point presentation.

### Sleep Deprivation and Fatigue

#### Effects on Performance in Residency Training

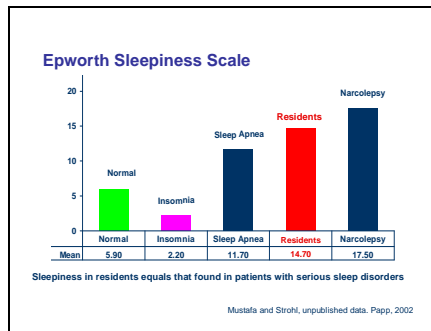
Adapted from the American Academy of Sleep Medicine

### 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

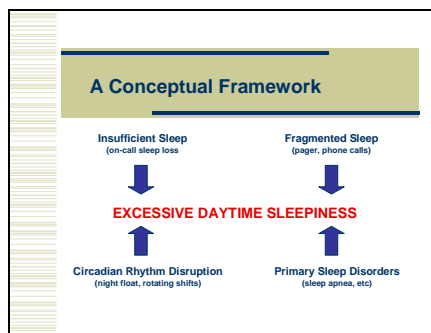


### What Causes Sleepiness?



**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.



## How Much Sleep is Enough?

**Myth:** I'm one of those people who only need 5 hours of sleep, so none of this applies to me.

**Fact:** Individuals may vary somewhat in their tolerance to the effects of sleep loss, but are not able to accurately judge this themselves.

**Fact:** Getting less than 8 hours of sleep starts to create a "sleep debt" which must be paid off.

## The Circadian Clock Impacts You



- It is easier to adapt to shifts in forward (clockwise) direction
- It is easier to stay up later than to try to fall asleep earlier
- Night owls may find it easier to adapt to night shifts

## Adaptation to Sleep Loss

**Myth:** I've learned not to need as much sleep during residency

**Fact:** Sleep needs are genetically determined & cannot be changed

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

## Consequences of Chronic Sleep Deprivation

**Surgery:** 20% more errors and 14% more time required to perform simulated laparoscopy post-call (two studies)  
Taffinder et al, 1998; Grantcharov et al, 2001

**Internal Medicine:** Efficiency and accuracy of ECG interpretation impaired in sleep-deprived interns  
Lingenfelter et al, 1994

**Pediatrics:** Time required to place an intra-arterial line increased significantly in sleep-deprived  
Storer et al, 1989

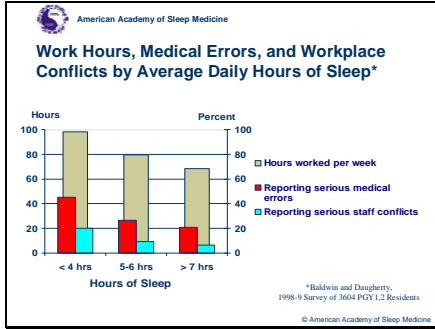
## Consequences of Chronic Sleep Deprivation

**Emergency Medicine:** Significant reductions in comprehensiveness of history & physical exam documentation in second-year residents  
Bertram 1988

**Family Medicine:** Scores achieved on the ABFM practice in-training exam negatively correlated with pre-test sleep amounts  
Jacques et al 1990

## Impact on Professionalism

"Your own patients have become the enemy... because they are the one thing that stands between you and a few hours of sleep."

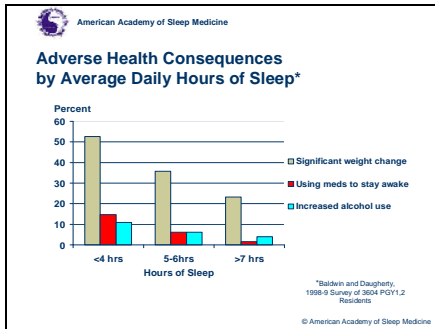


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### Bottom Line:

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

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### Sleep Loss and Fatigue: Safety Issues

- 58% of emergency medicine residents reported near-crashes driving.
  - 80% post night-shift
  - Increased with number of night shifts/month
- 50% greater risk of blood-borne pathogen exposure incidents (needlestick, laceration, etc) in residents between 10pm and 6am

Steele et al 1999  
Parks 2000  
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### 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."

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### Recognizing Sleepiness in Yourself and Others

**Myth:** If I can just get through the night (on call) I'm fine in the morning.

**Fact:** A decline in performance starts after about 15-16 hours of continued wakefulness.

**Fact:** The period of lowest alertness after being up all night is between 6am and 11am.

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## Estimating Sleepiness

**Myth:** I can tell how tired I am and know when I'm not functioning up to par.

**Fact:** Studies show that sleepy people underestimate their level of sleepiness and overestimate their alertness.

**Fact:** The sleepier you are, the less accurate your perception of degree of impairment.

**Fact:** You can fall asleep briefly (microsleep) without knowing it!

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## 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 really just don't care

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## Alertness Management Strategies

**Myth:** I'd rather just "power through" when I'm tired; besides, when I nap, it just makes me feel worse."

**Fact:** Some sleep is always better than no sleep.

**Fact:** At what time and for how long you sleep are key to getting the most out of napping.

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## 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

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## Napping

**Naps temporarily improve alertness**

**Types:** Preventative (pre-call) and operational (on the job)

**Length:** Short naps: no longer than 30 minutes to avoid the grogginess ("sleep inertia") that occurs when you're awakened from deep sleep

Long naps: 2 hours (range 30 to 180 minutes)

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## Napping

**Timing:** If possible, take advantage of circadian "windows of opportunity" (2-5 am and 2-5 pm)– If not, nap whenever you can!

**Cons:** Sleep inertia– allow adequate recovery time (15-30 minutes)

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

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## Caffeine

- **Strategic consumption is key**
- Effects within 15 – 30 minutes; half-life 3 to 7 hours
- Use for temporary relief of sleepiness
- Cons:
  - disrupts subsequent sleep
  - tolerance may develop
  - diuretic effects

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## Drugs

Melatonin: Little data in residents

Hypnotics: May be helpful in specific situations (persistent insomnia)

**AVOID:** Using stimulants (methylphenidate, dextroamphetamine, modafinil) to stay awake

**AVOID:** Using alcohol to help you fall asleep; it induces sleep onset but disrupts sleep later on

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## 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 extended sleep to restore baseline alertness.

**Fact:** Recovery sleep generally has a higher percentage of deep sleep which is needed to counteract the effects of sleep loss.

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## Adapting To Night Shifts

**Myth:** I get used to night shifts right away; no problem

**Fact:** It takes at least a week for circadian rhythms and sleep patterns to adjust

**Fact:** Adjustment often includes physical and mental symptoms

**Fact:** Direction of shift rotation affects adaptation (forward/clockwise easier to adapt)

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## How To Survive Night Float

- Protect your sleep
- Nap before work
- Consider "splitting" sleep into two 4 hour periods
- Have as much exposure to 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)

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## "The best laid plans..."

**Study:** Impact of night float coverage (2am to 6am)

**Results:** "Protected" interns slept less than controls; used time to catch up on work, not sleep

**There was no improvement in performance**

Richardson et al 1996

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**In Summary...**

- Fatigue is an impairment like alcohol or drugs.
- Drowsiness, sleepiness, and fatigue cannot be eliminated in residency but can be managed.
- Recognition of sleepiness and fatigue and use of alertness 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.

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**In Summary...**

For more information visit:


[www.aasmnet.org/MEDSleepprogram.htm](http://www.aasmnet.org/MEDSleepprogram.htm)

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**"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*



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**Appendix 6: Sample Annual/Semi-annual evaluation form**

**Formal Resident Evaluation Summary**

**Resident:** \_\_\_\_\_ **Evaluation Period:** \_\_\_\_\_

\_\_\_\_\_  
**Resident Signature**

\_\_\_\_\_  
**Date Reviewed**

\_\_\_\_\_  
**Program Director Signature**

**Note:** This evaluation is designed to allow programs requiring formal evaluation on at least a semi-annual basis to document that a review of performance occurred and that the resident acknowledged the information provided in the review. It provides a tool to address and summarize academic performance for the period indicated and addresses each of the six core competencies developed by the ACGME. Assessment should reflect generally accepted standards for performance at the level appropriate for the individual's PGY level.

**Instructions:** The evaluation form is sub-divided into specific performance areas for each competency. For each area check the column under the description that best reflects performance. Use as the standard of assessment either (1) the level of skills, knowledge and attitudes agreed upon or generally accepted by faculty members as appropriate for the level of training or (2) (preferably) defined criteria that have been developed to assess performance on individual components of objectives.

**The program director and resident should sign this cover page and the resident should initial and date each of the following pages.**

<b>Competency I:</b>  <u>Patient Care</u>	<b>Assessment Method(s)</b> (D) Direct observation (T) Standardized test (written/oral) (C) Clinical records review (E) Evaluation by other providers and staff (S) Patient Survey (M) Mini clinical exam (P) Portfolio review (O) Other (specify)	<b>Consistently meets all objectives</b>	<b>Meets most objectives</b>	<b>Does not meet most objectives</b>	<b>Not Applicable</b>
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

<b>Competency II:</b> <u>Medical Knowledge</u>	<b>Assessment Method(s)</b> (D) Direct observation (T) Standardized test (written/oral) (C) Clinical records review (E) Evaluation by other providers and staff (S) Patient survey (M) Mini clinical exam (P) Portfolio review (O) Other (specify)	<b>Consistently meets all objectives</b>	<b>Meets most objectives</b>	<b>Does not meet most objectives</b>	<b>Not Applicable</b>
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

<b>Competency III:</b> <u><b>Practice-Based Learning and Improvement</b></u>	<b>Assessment Method(s)</b> <b>(D) Direct observation</b> <b>(T) Standardized test (written/oral)</b> <b>(C) Clinical records review</b> <b>(E) Evaluation by other providers and staff</b> <b>(S) Patient survey</b> <b>(M) Mini clinical exam</b> <b>(P) Portfolio review</b> <b>(O) Other (specify)</b>	<b>Consistently meets all objectives</b>	<b>Meets most objectives</b>	<b>Does not meet most objectives</b>	<b>Not Applicable</b>
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

<b>Competency IV:</b> <u>Interpersonal and Communication Skills</u>	<b>Assessment Method(s)</b> (D) Direct observation (T) Standardized test (written/oral) (C) Clinical records review (E) Evaluation by other providers and staff (S) Patient survey (M) Mini clinical exam (P) Portfolio review (O) Other (specify)	<b>Consistently meets all objectives</b>	<b>Meets most objectives</b>	<b>Does not meet most objectives</b>	<b>Not Applicable</b>
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      \_\_\_\_\_

Resident initials and date

<b>Competency V:</b>  <u><b>Professionalism</b></u>	<b>Assessment Method(s)</b> (D) <b>Direct observation</b> (T) <b>Standardized test (written/oral)</b> (C) <b>Clinical records review</b> (E) <b>Evaluation by other providers and staff</b> (S) <b>Patient survey</b> (M) <b>Mini clinical exam</b> (P) <b>Portfolio review</b> (O) <b>Other (specify)</b>	<b>Consistently meets all objectives</b>	<b>Meets most objectives</b>	<b>Does not meet most objectives</b>	<b>Not Applicable</b>
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

<b>Competency VI:</b> <u><b>Systems-Based Practice</b></u>	<b>Assessment Method(s)</b> <b>(D) Direct observation</b> <b>(T) Standardized test (written/oral)</b> <b>(C) Clinical records review</b> <b>(E) Evaluation by other providers and staff</b> <b>(S) Patient survey</b> <b>(M) Mini clinical exam</b> <b>(P) Portfolio review</b> <b>(O) Other (specify)</b>	<b>Consistently meets all objectives</b>	<b>Meets most objectives</b>	<b>Does not meet most objectives</b>	<b>Not Applicable</b>
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

**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

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



\_\_\_\_\_ Original to resident permanent file \_\_\_\_\_

Program Coordinator

\_\_\_\_\_

Date

**Appendix 7: ABPN Clinical Skills Evaluation Requirements and Scoring Criteria  
(Evaluation Forms are available from the coordinator)**

**AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY  
CLINICAL SKILLS EVALUATION OF RESIDENTS IN  
NEUROLOGY AND CHILD NEUROLOGY  
July 2006**

General Principles

The American Board of Psychiatry and Neurology (ABPN) mandates that demonstration of clinical skills competency is a basic requirement in order to apply for certification in the specialties of neurology and neurology with special qualification in child neurology.

Competency in these skills should be achieved during residency. The ABPN requires that residents demonstrate competency in the following areas:

- A. Medical interviewing
- B. Neurological examination
- C. Humanistic qualities, professionalism, and counseling skills

Demonstration of competency in evaluating a minimum of five different patients (as specified below) during residency training is required. An individual training program may elect to do more such evaluations.

Required Clinical Skills Evaluations

Adult Neurology Residents

- 1) Critical care: One critically ill adult patient with neurological disease (may be in either an intensive care unit or emergency department setting or an emergency consultation from another inpatient service)
- 2) Neuromuscular: One adult patient with a neuromuscular disease (may be in either an inpatient or outpatient setting)
- 3) Ambulatory: One adult patient with an episodic disorder, such as seizures or migraine (most likely in an outpatient setting)
- 4) Neurodegenerative: One adult patient with a neurodegenerative disorder, such as dementia, a movement disorder, or multiple sclerosis (most likely in an outpatient setting)
- 5) Child patient: One child patient with a neurological disorder (most likely in an outpatient setting)

Child Neurology Residents

- 1) Critical care: One critically ill child patient with neurological disease (may be in either an intensive care unit or emergency department setting or an emergency consultation from another inpatient service)
- 2) Neuromuscular: One child patient with a neuromuscular disease (may be in either an inpatient or outpatient setting)
- 3) Ambulatory: One child patient with an episodic disorder, such as seizures or migraine (most likely in an outpatient setting)
- 4) Neurodegenerative: One child patient with a neurodegenerative disorder, such as an inherited degenerative disease (most likely in an outpatient setting)
- 5) Adult patient: One adult patient with a neurological disorder (most likely in an outpatient setting)

At least one of the above child patients must be:

- An infant or child aged younger than two
- A child aged six to ten
- An adolescent (aged 11 – 15)

The selection of patients (outlined above) by type and age is at the discretion of the residency director.

#### Selection of Patients

If possible, the patients should be unknown to the resident. While it is preferable that the patients have not been seen previously by any resident, patients previously seen at the institution may be asked to participate in the evaluation process. Whenever possible, patients with conversion disorders or somatoform disorders should not be selected. The selection of patients is at the discretion of the residency director.

#### Evaluators

Each resident must be evaluated by a minimum of three ABPN-certified neurologists/ child neurologists who are faculty members. Adult neurologists must perform the adult neurology evaluations, and child neurologists must perform the child neurology evaluations. The faculty member must observe the resident's performance and score the resident's medical interviewing skills; neurological examination skills; humanistic qualities, professionalism, and counseling skills. The resident's ability to present and formulate the case should also be evaluated, but that assessment is not to be factored into the overall evaluation.

#### Duration of Each Encounter

Each evaluation session should last approximately one hour. The residents should be given up to 45 minutes to do the history and neurological examination. Thereafter, he/she should have 10-15 minutes to present a summary of the important findings on history and neurological examination. The remainder of the time should be spent in discussion and feedback from the faculty member who observed the encounter.

While the faculty member may wish to discuss the diagnosis, differential diagnosis, and plans for evaluation and treatment with the resident, these steps are not required by the ABPN. The resident does not need to demonstrate proficiency in these aspects of the encounter to pass the clinical skills evaluation. These competencies will be tested by the ABPN on the certification examination.

#### Timing of the Evaluations

The ABPN encourages administering these evaluations early in residency training. The ABPN anticipates that many residents may not "pass" all their evaluations on the first attempt. Early evaluation provides an opportunity for the residents to rectify any deficiencies and to successfully complete the process in order to apply to take the certification examination.

#### Evaluation Forms and Scoring Criteria

Approved evaluation forms are posted on the ABPN web site (<http://www.abpn.com/forms.htm>). Two forms are currently available (NEX v.1 and NEX v.2). Programs can add additional items for their own purposes. Criteria for scoring the components of the clinical skills evaluation are provided below.

#### Determination of Passing the Evaluation

The individual faculty member will determine if the resident passed all three core components (A. Medical interviewing, B. Neurological examination, and C. humanistic qualities, professionalism, and counseling skills) of the clinical evaluation.

***A passing score is required for all three components (A, B, and C) for an overall passing score. Regardless of when during training the resident takes the evaluation, the standard for passing remains the same.***

Because the resident may take each of these clinical skills evaluations multiple times if necessary (which will not affect the resident's eligibility for taking the ABPN certification examination), there should not be pressure to pass a resident's performance on an evaluation. If the performance is less than desired, the resident and faculty can schedule other encounters and use these experiences as teaching exercises.

#### Submission of Documentation to the ABPN

The ABPN requires written attestation from the training director that the resident has successfully passed all five clinical skills evaluations at the time of application for certification. The number of times that the resident takes one of the clinical skills evaluations is not required. It is recommended that the program retain the evaluation forms as part of the resident's training file.

#### Components of the Clinical Skills Evaluation and Scoring Criteria

##### A. Medical Interviewing Skills

The ability to obtain a clear history is a fundamental component of the core competency of patient care. The art of being an excellent neurologist is the ability to make an accurate localization of the patient's neurological illness and to reach a most likely diagnosis based on the patient's history. The ABPN expects that residents have achieved competency in this skill prior to being permitted to take the certification examination. The faculty member should observe the resident's skills and thoroughness in obtaining the history.

The ABPN recognizes that neurologists may use several different strategies to obtain the history from a patient and that the approach may vary among different patients. Thus, the ABPN requires that residents successfully demonstrate the ability to perform a thorough and accurate history in a minimum of five encounters.

The resident is expected to ask about the chief complaint, the history of the present illness, past medical history, family history, social history, and a review of systems. The quality and completeness of the information collected from all components of the history should be evaluated. The ABPN expects the resident to skillfully obtain the history. While the emphasis of the history should relate to the patient's neurological illness, relevant components of the other aspects of history should be mentioned. For example, if the patient has had a stroke, it is relevant to ask about hypertension, heart disease, a family history of stroke, smoking, and recent cardiac complaints.

Depending upon the patient, the resident can use very direct or open-ended questions.

The technique used by the resident to obtain the historical information reflects the resident's ability to communicate with the patient as well as his/her ability to change techniques to obtain the necessary information.

The resident should not review prior medical records in order to obtain the patient's history. The focus of this evaluation is on the ability of the resident to obtain the history from a "new" patient or family members/observers, as would be done in practice.

The resident is expected to obtain information about the duration and course of the neurological illness and the types of neurological symptoms. While a chronological approach often is desirable, different strategies are acceptable. If appropriate, the resident should obtain information about any incident or event that may have precipitated the neurological problems. If it is a long-standing illness, the resident should ask about recent changes. If it is an episodic disorder, information about the number and types of

events, provocations, duration of symptoms, etc. Should be obtained. The resident should ask questions that probe for both positive (presence of) or negative (absence of) important symptoms or components of the neurological history. These include pain, loss of consciousness, weakness, etc. Information about prior treatment (medications, surgery, etc.) Can provide important diagnostic clues. Did the resident miss important historical clues offered by the patient? Did the resident follow-up on components of the history?

At the end of the history, both the resident and the observing faculty member should have a clear understanding of the nature of the patient's neurological illness.

Score	Scoring Criteria for Medical Interview
8 (Outstanding)	The history was performed without criticism. The history provides a clear understanding of the patient's neurological illness.
7 (Excellent)	A few minor deficiencies or errors in the history
6 (Very good)	Minor deficiencies or errors in the history
5 (Acceptable)	Deficiencies or errors in history but enough information is obtained to formulate the case
4 (Borderline but unacceptable)	Had deficiencies or errors in obtaining the history which resulted in missing information
3 (Unsatisfactory)	Major deficiencies or errors in obtaining the history resulting in missing important information. Performance below other residents at same level of training.
2 (Poor)	Omitted major portions of the history, resulting in inadequate understanding of the case. Performance below expectations for level of training.
1 (Very poor)	History was so poorly done that the resident could not understand the case. Performance far below expectations for level of training.

A score of 5 or greater is required to pass this component of the clinical skills evaluation.

#### B. Neurological Examination Skills

The ability to perform a thorough examination is a major component of the core competency of patient care. For a neurologist, the ability to do a neurological examination is a fundamental clinical skill.

The ABPN recognizes that there are different approaches to the neurological examination and no particular style, sequence, or organization is required. However, the ABPN expects the neurological examination to be thorough and to assess mental status, station and gait, motor, sensory, coordination (cerebella), cranial nerves, and reflexes. In some circumstances, such as a wheelchair bound patient, parts of the examination may be omitted. While the ABPN expects that all aspects of the examination will be performed, components of the examination should reflect the nature of the patient's problem (as obtained from the history). Some adjustments should be expected. For example, the resident may wish to do a more detailed mental status examination in a patient with a chief complaint of memory loss than in a patient with symptoms of tardy ulnar palsy.

The resident should not be expected to do a general physical examination. In some circumstances, components of the general examination may be relevant to the patient's presentation. For example, the resident may wish to auscultate for bruits in a patient with a TIA.

The resident's interactions with the patient during the examination should be assessed. Was the resident rough? For example, did the resident examine a painful leg to the obvious discomfort of the patient, despite being warned not to do so? Did the resident do components of the examination in the correct manner? Did the resident use the appropriate instruments and were the instruments used correctly? Were major relevant portions of the examination missed? Did the resident detect the relevant neurological signs?

Did the resident ignore or misinterpret some of the neurological findings? Did the resident adjust the examination in response to previously detected signs? Did the findings of the examination prompt the resident to ask additional history? Did the findings of the examination prompt reconsideration of the location or nature of the neurological illness?

At the end of the examination, both the resident and the faculty member should have a clear understanding of the location and nature of the patient's neurological illness. The findings on the examination should be compatible with the patient's neurological history.

Score	Scoring Criteria for Neurological Examination
8 (Outstanding)	The neurological examination was performed with no detected shortcomings
7 (Excellent)	A few minor deficiencies or errors in the neurological examination
6 (Very good)	Minor deficiencies or errors in the neurological examination
5 (Acceptable)	Deficiencies or errors in the neurological examination but obtained enough information to formulate the case
4 (Borderline but unacceptable)	Had deficiencies or errors in performing the examination resulting in missing information
3 (Unsatisfactory)	Major deficiencies or errors in performing the examination resulting in missing important information. Performance below other residents at same level of training.
2 (Poor)	Omitted major portions of the examination resulting in inadequate understanding of the case. Performance below expectations for level of training.
1 (Very poor)	Examination was so poorly done that the resident did not understand the case. Performance far below expectations for level of training.

A score of 5 or greater is required to pass this component of the clinical skills evaluation.

### C. Humanistic Qualities, Professionalism, and Counseling Skills

The ability to communicate effectively with patients and families is one of the six core competencies for physicians. Effective communication is a key component of a physician's interpersonal skills and in the development of an appropriate patient-doctor relationship. In order to determine if residents are able to communicate clearly and

thoroughly with patients in a number of clinical settings, including critically ill patients, the ABPN is requiring evidence that the resident has passed this core competency.

The communication skills of the resident should be assessed throughout the patient encounter. The communication can include both verbal and non-verbal means. For example, being rough during the examination can convey a lack of skill in communication. The resident's performance should be scored in light of the patient's ability to cooperate with the examination. While there is no set criterion for passing this competency, the overall performance should be the basis for grading this clinical skill.

The resident should be sensitive to ethnic, racial, religious, or cultural issues. The resident also should be aware of educational, language, or community issues that may affect the patient's ability to communicate. The resident should take steps or employ strategies that deal with these issues and at the same time permit an accurate history and examination. If the patient does not speak English, the resident should seek other ways to communicate with the patient, such as the use of a translator or talking to family members who are proficient in English.

The dialogue between the patient and the resident should be evaluated. Did the resident make the patient and family feel as comfortable as possible in the situation? Did the resident interact in a neutral or positive way with the patient? Did the resident demonstrate respect for the patient and family? Was the resident rude, brusque or demanding? Did the resident interrupt the patient during the history? Did the resident fail to follow-up on the patient's comments? Did the resident allow the patient to respond to questions? Did the resident revise or reformat questions when it appeared that the patient did not understand? Did the resident direct questions to family members if it appeared that the patient did not have information about part of the history? Did the resident explain the components of the neurological examination and give clear instructions?

Score	Scoring Criteria for Humanistic Qualities, Professionalism, and Counseling Skills
8 (Outstanding)	Effective communication skills and patient-doctor interactions
7 (Excellent)	A few minor problems in communication or patient-doctor interactions
6 (Very good)	Minor problems in communication or patient-doctor interactions
5 (Acceptable)	Had problems in communication or patient-doctor interactions but still established rapport
4 (Borderline but unacceptable)	Had problems in communication or patient-doctor interactions, rapport with patient was borderline or not good
3 (Unsatisfactory)	Major problems in communication or patient-doctor interactions, unable to establish rapport with patient
2 (Poor)	Major problems with communication, rude or unpleasant to patient
1 (Very poor)	Interactions or communication with the patient were so bad that the faculty member needed to intervene

A score of 5 or greater is required to pass this component of the clinical skills evaluation.

D. Overall Evaluation

The individual faculty member will determine if the resident passed all three core components (A. Medical interviewing, B. Neurological examination, and C. humanistic qualities, professionalism, and counseling skills) of the clinical evaluation. A passing score is required for all three components (A., B., and C.) For an overall passing score. Regardless of when during training the resident takes the evaluation, the standard for passing remains the same.

E. Presentation/Formulation

The resident's ability to present and formulate the case should also be evaluated, but that assessment should not be factored into the overall evaluation.

Score	Scoring Criteria for Presentation/Formulation
8 (Outstanding)	No major deficiencies in the description of the key findings of the history and neurological examination
7 (Excellent)	One minor deficiency in the description of the key findings of the history or neurological examination
6 (Very good)	Two minor deficiencies in the description of the key findings of the history or neurological examination
5 (Acceptable)	A few minor deficiencies or one major deficiency in the description of the key findings of the history or neurological examination
4 (Borderline but unacceptable)	Several minor deficiencies or two major deficiencies in the description of the key findings of the history or neurological examination; missed some points
3 (Unsatisfactory)	Several major deficiencies in the description of the key findings of the history or neurological examination; missed several points
2 (Poor)	Multiple major deficiencies in the description of the key findings of the history or neurological examination; summary of findings was incomprehensible
1 (Very poor)	Numerous major deficiencies in the description of the key findings of the history or neurological examination; summary of findings was incomprehensible

A score of 5 or greater is required to pass this component of the clinical skills evaluation, though it is not required for the overall evaluation.

