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INTRODUCTION:

Child Neurology is a specialty of both pediatrics and neurology which focuses on the nervous system of the pediatric population. The practice of child neurology requires competence and training in both pediatrics and neurology in order to understand and treat disorders of the pediatric nervous system. This manual outlines the goals and expectations as well as logistics of the Child Neurology training program at The University of Alabama at Birmingham.

A. Clinical competence requires:

1. A solid fund of basic and clinical knowledge and the ability to maintain it at current levels for a lifetime of continuous education.
2. The ability to perform an adequate history and physical examination.
3. The ability to appropriately order and interpret diagnostic tests.
4. Adequate technical skills to carry out selected diagnostic procedures.
5. Clinical judgment to critically apply the above data to individual patients.
6. Attitudes conducive to the practice of neurology, including appropriate interpersonal interactions with patients and families, professional colleagues, supervisory faculty and all paramedical personnel.
7. Personal integrity.
8. Regular, timely attendance at educational activities of the Departments of Neurology and Pediatrics.
9. Timely dictation and signature of inpatient discharge summaries and outpatient notes and when appropriate letters and or phone calls to referring physicians.
10. Recognizing professional limits. Controversial issues require direct and immediate participation of either the responsible attending or senior fellow.

B. Basic neuroscience knowledge should include:

1. Neuroanatomy
2. Neuropharmacology
3. Neurophysiology
4. Neurochemistry
5. Neuropathology

It is expected that these goals will be met through a combination of clinical experience, didactic sessions and the fellow's personal educational efforts.

Guidelines for Fellowship Appointments and Licensure:

Below are the guidelines which apply to all individuals applying for and appointed to fellowship positions under the sponsorship of the College of Medicine.

- A. All applicants for fellowship positions must have passed:
 - 1. Step 1 of the USMLE for allopathic (MD) physicians
 - 2. Step 1 of the USMLE or Step 1 of COMPLEX for osteopathic (DO) physicians
- B. All fellows with the MD degree must pass Step 2 and Step 3 of the USMLE by the end of the second year of residency (PGY2).
- C. All fellows with the DO degree must pass Step 3 of the USMLE or the final step of the osteopathic licensing examination by the end of the second year of residency training.
- D. Fellows who fail to pass the requisite examinations as stipulated above by the end of the second year of training (PGY2) will be terminated from fellowship training.
- E. All steps of the USMLE examination must be passed within seven (7) years per Alabama State Board of Medical Examiners rules.
- F. Any applicant for licensure who fails any part of the USMLE three (3) times will not be eligible for licensure. (Alabama State Board of Medical Examiners rule as of July 1, 1999)

Any individual considered for any clinical training position at the PGY3 or above levels must have passed all licensure examination steps and be capable of being licensed by either the allopathic or osteopathic boards of the State or already possess such license.

Fellow Selection

The University of Alabama Child Neurology Program joined the National Residency Matching Program in 2012. Fellowship applications are only accepted through the Electronic Residency Application Service, ERAS.

Fellows are invited to interview upon receipt of required documents from ERAS based on the following considerations:

- 1. All Fellowship Appointment and Licensure requirements have been met
- 2. Letters of recommendation
- 3. Academic Credentials and Experience
- 4. Clinical Skills/Training
- 5. Personal Qualities

UAB Child Neurology Training Requirements:

Fellow Guidelines beginning Academic Year 2003

Year 1: Adult Neurology

Year 2: Clinical Child Neurology

Ambulatory: 2 months

Inpatient: 6 months

New Program requirements

Effective 7/1/07 changed the minimum required number of outpatient months from 6 to 2. The group discussed possible alternatives for those months. Fellows are welcome to request to use up to 4 months in the areas of research and scholarly activities.

Year 3: Basic Child Neurology

Child Psychiatry: 1 month

Basic or Applied Neuroscience: 2 months

These 2 months will include concentrated training in one or more of the following areas: neuroimaging, neurophysiology (EMG or EEG), neuropathology, neuropsychology, neurochemistry, neuropharmacology, neuroanatomy, behavioral development, genetics, molecular biology, immunology, epidemiology or statistics.

Elective: 9 months

Elective time should accommodate individual fellow interests and previous training. The elective months are to be scheduled in consultation with the Child Neurology program director and may include a combination of the following:

- (1) Additional child neurology inpatient months during which the fellow will assume increased responsibility for management of the inpatient service
- (2) Subspecialty rotations at Children's Hospital, UAB or North Alabama Specialty Clinics in Huntsville (options include but are not limited to rotations with Rehabilitation Medicine, Neurosurgery, multi-disciplinary clinics at the Sparks Center, Clinical Genetics and Neuro-ophthalmology.)
- (3) Rotations may be arranged with pediatric neurologists at other institutions or in private practice but these rotations must first be approved by the program director.
- (4) Mentored research in clinical or basic science

Required clinics for Year 1:

Fellow continuity clinic held once a week (Tues PM at Children's)

Required Clinics for Years 2-3:

Fellow continuity clinic held once a week (Tues PM at Children's)
General Child neurology clinic held once a week (Friday AM at Children's)
Children's Rehab Services, CRS, Seizure clinic (1st Wed AM monthly at Children's)
Muscular Dystrophy clinic (3rd Wed AM, PM monthly at Children's)

CALL REQUIREMENTS

Night call is an essential component of training in Child Neurology. Night call consists of phone consultation with patients, parents and physicians from Children's Hospital or the community. Although most call is handled by telephone, at times the fellow or resident will need to evaluate patients in the Emergency Department, intensive care unit or inpatient ward. The on-call resident or fellow is expected to be available at all times by pager and is provided a cellular telephone while on-call. Faculty supervision is available at all times.

The call schedule is divided between the Child Neurology fellows and the Adult Neurology residents as follows:

Child Neurology fellow on inpatient service:	Q 3-4 night
Child Neurology fellow on other services:	Q 3-4 night
Adult Neurology resident on Child Neuro service:	Q 3-4 night

Scheduled call will not exceed the number of nights listed above but may decrease during months when there are several residents and fellows to share call.

FATIGUE POLICY MEMORANDUM

Department of Pediatrics: Identification, Management and Prevention of Excessive Fatigue in Residency Training

In February 2003, the Accreditation Council for Graduate Medical Education (ACGME), the Residency Review Committee for Pediatrics (RRC) and the UAB Deans Council on Graduate Medical Education (DCGME) issued new residency program requirements on Resident Duty Hours. These new requirements mandate specific changes to our Departmental policies with the primary goals of improving residency training and minimizing the negative effects of excessive resident fatigue. Limitations to resident work hours are defined in a separate policy statement. This statement is intended to define mechanisms to Identify, Manage and Prevent Excessive Fatigue in the Pediatric Residency Training Program. Specifically programs are required to educate faculty and residents to recognize the signs of fatigue and adopt and apply policies to prevent and counteract the potential negative effects of fatigue.

Fatigue: a feeling of tiredness or weariness resulting from continued activity.

Although long work hours are a time-honored tradition in residency training programs and medical practice, recent studies on the effect of sleep deprivation and fatigue on performance of

physicians and on the health of physicians call this model into question. (1) Optimal performance requires sleep. In general, when healthy adults receive an average of less than 5 hours of sleep per night, their performance suffers. The impact of sleep loss on performance has been documented by sleep studies. Both short term sleep loss and chronic sleep deprivation cause fatigue and may have similar behavioral results.

Signs of fatigue include:

1. Reduced attention to detail and vigilance.
2. Slowed verbal processing.
3. Impaired problem solving.
4. Anger, frustration, confusion.
5. Poor self recognition of the degree of fatigue.
6. Increased procedural complications.
7. Increased medical errors.
8. Depression.
9. Difficulty staying awake (falling asleep during rounds or conferences)

Studies also demonstrate increased somatic complaints, and pregnancy related complications in residents related to sleep loss and fatigue (2). In addition, several studies document sleep loss or fatigue as a risk factor for motor vehicle accidents, particularly in post-call residents (3). Thus with this background the following policy is formulated:

1. All patient care must be supervised by qualified faculty. A separate policy statement defines mechanisms for ensuring continuous faculty supervision.
2. A separate policy on Resident Duty Hours and the Working Environment address specific work limitations and rules to minimize resident fatigue.
3. Since resident moonlighting can add to the effects of chronic fatigue, a separate policy on Resident Moonlighting outlines mechanisms to lessen the impact of moonlighting on resident fatigue.
4. Back up support systems are provided when patient care responsibilities are unusually difficult or prolonged, or if unexpected circumstances create resident fatigue sufficient to jeopardize patient care. If a resident or faculty member believes such a situation exists, they should immediately contact their supervisor or chief residents in accordance with the sick call policy.
5. If a resident, resident colleague or faculty member identifies signs or symptoms of fatigue in colleagues or themselves, they have the responsibility to notify the individual of their concerns. It is appropriate to offer a break or relief to a colleague demonstrating signs of fatigue. Studies have documented that even short breaks or naps for as short as 30 minutes may be sufficient and safe countermeasures to fatigue. Low doses of caffeine may also prove useful in counteracting minor fatigue (4).
6. If a colleague is demonstrating signs of excessive fatigue unresponsive to rest and is unable to return safely to the work environment, supervising residents, chief residents or the program

directors should be contacted to arrange relief. The resident sick call backup system will be utilized.

7. A resident who feels unable to provide effective care due to fatigue or other reason should activate the resident sick call system.

8. Failure of a resident to respond to concerns of poor performance due to excessive fatigue or other problem should be reported to the chief residents and/or program directors to ensure patient and resident safety.

9. If following an overnight shift or especially stressful patient care experience a resident or colleague believes that the situation could endanger or impair the residents drive home, the resident should stay in the hospital and rest prior to departing. On call rooms may be utilized for this purpose.

10. Residents must take advantage of increased time off as outlined in the new work rules for increased rest and recreation. Studies have demonstrated that work hours limitations do not necessarily translate into more sleep or rest. Failure to obtain adequate rest during off duty hours may result in limitation of moonlighting or other work settings to ensure resident rest and recuperation for call duties.

11. With the limitations in work hours outlined by the ACGME and initiated in July of 2003, episodes of excessive Resident fatigue should rarely be an issue requiring use of the sick call system. Resident who find themselves repeatedly fatigued despite these safeguards should consider whether their current Residency Training Program is too busy or stressful for their individual needs. If the Program Directors note a pattern of excessive fatigue in individual residents, not ameliorated by these protections and safeguards, they may recommend or mandate such a change in status for the health and safety of the resident and the good of the program.

12. At least one Resident Noon Conference session per year should be utilized to provide further information and training on recognition and prevention of sleep deprivation and chronic fatigue. In addition, a review of this policy will be provided at New Intern Orientation.

References:

1. Veasey S, Rosen R, Barzansky B, et al: Sleep loss and fatigue in residency training. JAMA 2002; 288: 1116.
2. Klebanoff MA, Shiono PH and Rhoads GG. Spontaneous and induced abortion among resident physicians. JAMA 1991; 261: 2821.
3. Marcus CL, Loughlin GM. Effect of sleep deprivation on driving safety in housestaff. Sleep 1996; 19: 763.
4. Wright KP, Badia P, Myers BL, Plenier SC. Combination of bright light and caffeine as a countermeasure for impaired alertness and performance during extended sleep deprivation. J Sleep Res 1997; 6:26-35.
5. Statement of Justification/Impact for the Final Approval of Common Standards Related to Resident Duty Hours. ACGME September 2002.

Policy on Moonlighting
Division of Child Neurology
University of Alabama in Birmingham

The Division of Child Neurology at UAB discourages moonlighting activities for PGY 4 and 5 residents. However, the division appreciates the increasing financial demands of residents and does allow moonlighting activities for PGY 4 and 5 residents who comply with the following:

- a. Residents who wish to engage in moonlighting activities must request permission from the program director in writing before scheduling any such activity.
- b. The request should include the location and frequency of planned moonlighting activities.
- c. Resident performance will be monitored by the program director for evidence of adverse impact of the moonlighting activity on resident training.
- d. Residents participating in moonlighting activities must be fully licensed to practice medicine in the State of Alabama.
- e. If the program director detects evidence of adverse impact on training from moonlighting activities, the moonlighting activities will cease.
- f. Failure of a resident to comply with this policy may result in disciplinary action.

A record of moonlighting activities will be kept in the resident's file. Professional liability insurance is not supplied by the hospital for moonlighting activities. It is the responsibility of the institution hiring the resident for moonlighting to insure that appropriate coverage is in place.

DUTY HOURS SPECIALTY SPECIFIC

Policy on Duty Hours, Back-up Support and On-call Schedules
Division of Child Neurology at The University of Alabama in Birmingham

The Division of Child Neurology at UAB complies with the duty hours regulations set forth by the ACGME.

Duty hours are defined as all clinical and academic activities related to the residency program, ie, patient care (both 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.

Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house activities.

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.

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.

1. The child neurology resident takes at-home call (pager call) every 3-4 nights.
2. The child neurology resident is responsible for the Children's Hospital ER calls, the Children's Hospital inpatient consults, the UAB RNICU consults, cross coverage for the child neurology service and epilepsy monitoring service, and triaging phone consults from community physicians and patients.
3. When the resident is called into the hospital from home, the hours the resident spends in-house are counted toward the 80 hour limit.
4. The child neurology resident can accept a transfer from an outside hospital only after speaking with the child neurology attending.
5. The child neurology resident must notify the child neurology attending of all admission.
6. Each resident going off duty will provide a check out list of patients and have direct discussion of potential issues relating to patient care with the at-home call resident prior to signing out.
7. The child neurology resident always has back-up by a child neurology attending.
8. The child neurology attending is available at all times to the child neurology resident.
9. The program director and the faculty monitor the demands of at-home call of the child neurology resident and if necessary make scheduling adjustments to mitigate excessive service demands and/or fatigue.

TRAINING REQUIREMENTS FOR THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY

DURATION OF TRAINING

Training in child neurology shall encompass a total of 5 years.

The initial two years of training may be accomplished in one of three ways and are described in further detail by the American Board of Psychiatry and Neurology (www.abpn.com).

1. Two years of training in general pediatrics in an ACGME-accredited program.
2. One year of training in general pediatrics in an ACGME-accredited program and one year of research in the basic neurosciences.
3. One year of training in general pediatrics and one year of training in internal medicine in ACGME-accredited programs.

The program director must review and determine the acceptability of these initial 2 years of training.

CHILD NEUROLOGY FELLOWSHIP TRAINING:

In order to be board-eligible for Neurology with Special Qualifications in Child Neurology, the candidate must complete the pre-fellowship training and meet the following requirements in child neurology training:

1. One year of training in adult neurology in an ACGME-accredited program.
2. Two years of training in child neurology in an ACGME-accredited program with the following requirements:
 - a. 12 months of child neurology (at least 4 months in ambulatory setting)
 - b. 1 month of child psychiatry
 - c. 2 months of basic or applied neurosciences
 - d. At least 3 months of elective time

The specific details for the UAB Child Neurology program are listed on page 4.

*As previously noted, fellowship training requirements may vary for those taking an alternative pathway to a career in child neurology.

Overall Educational Goals and Objectives for Child Neurology

Division of Child Neurology
University of Alabama Birmingham

Learning Objectives for the Residency Training as a Whole

The Division of Child Neurology Residency Training Program at UAB is here to provide each trainee with the clinical experience and didactic structure to prepare for independent practice in any setting as a fully qualified neurologist. This goal is accomplished through a combination of supervised clinical exposure in both the inpatient and outpatient settings as well as structured educational conferences throughout the training period.

- I. Patient Care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Evaluation Methods: 360 Degree Global Rotation Evaluation (360 GRE), Resident In-service Training Exam (RITE), Record Review (RR), Conference Attendance Logs (CAL), Neurology Clinical Evaluation Exercises (NEX)

1. Learn to perform a complete history and physical examination with particular emphasis on the neurological examination on patients with neurological problems or potential neurological problems.
2. Understand the decision-making process concerning the timing and appropriateness of laboratory, radiographic, electrodiagnostic, neuropsychological, and other imaging procedure testing.
3. Learn to evaluate and treat all categories of neurological diseases including:
 - a. Neurological emergencies such as status epilepticus, stroke, intracranial hemorrhage, spinal cord compression, meningitis, increased intracranial pressure, and myasthenic crisis.
 - b. Primary disorders of the central nervous system including acute, chronic, and degenerative processes.
 - c. Primary disorders of the peripheral nervous system including acute, chronic, and degenerative processes.
 - d. Primary disorders of muscle and neuromuscular junction.
 - e. Neurological complications of systemic disease.
 - f. Disorders that overlap between psychiatry and neurology.
 - g. Medical complications of neurological disease.

- II. Medical Knowledge** about established and evolving biomedical, clinical, and cognate sciences and the application of this knowledge to patient care.

Evaluation Methods: 360 GRE, RITE, CAL, NEX

1. Understand the biochemistry, neurophysiology and neuroanatomy that are the basis for normal neurological function.

2. Understand how disruption of normal function leads to pathology of the nervous system and muscle.
3. Know the presenting signs and symptoms of neurological problems.
4. Learn localization of a problem in the nervous system based on history and physical examination findings.
5. Learn to develop an appropriate differential diagnosis for neurological presentations.
6. Learn appropriate evaluation and treatment of neurological diseases in the inpatient and outpatient settings.
7. Understand the pharmacology of neurological therapeutics.
8. Learn appropriate indications for acute hospitalization.
9. Understand the functional recovery process and rehabilitation of neurological disorders.
10. Understand the course of chronic or progressive neurological disorders and where intervention and support of patients and/or families is possible.
11. Be familiar with the issue of psychosocial matters concerning community integration, adaptation and accessibility.

III. **Practice-based Learning and Improvement** that involves the investigation and evaluation of their own patient care, appraisal and assimilation of the scientific evidence and improvements in patient care.

Evaluation Methods: 360 GRE, RR, RITE, CAL

1. Learn good documentation skills in inpatient and outpatient settings.
2. Maintain a log of patient encounters and procedures.
3. Keep a list of patients seen in the outpatient clinics requiring follow up on laboratory or other diagnostic testing and review with the attending physician as needed.
4. Perform literature searches on topics in neurology and share results with the attending physician and treatment team.
5. Present patients at appropriate clinical conferences for discussion of diagnostic, treatment and outcomes issues.
6. Be familiar with the evidenced-based practice guidelines under development by the AAN.
7. Attend all didactic and clinical conferences when required.

IV. **Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families, and other health professionals.

Evaluation methods: 360 GRE, RR, NEX

1. Learn to direct team meetings and conferences as appropriate to level of training.
2. Document in a careful and concise fashion the findings of clinical evaluations.
3. Learn clear and concise order entry skills.
4. Participate and learn to direct patient/family conferences

5. Learn appropriate use of consultants in the outpatient and inpatient settings.
6. Monitor the progress of patient care by frequent discussions with other health professionals involved in providing that care.
7. Evaluate each patient before attending rounds and develop an assessment and plan on each patient to be discussed with the attending physician.

V. **Professionalism**, as manifested through a commitment to carry out professional responsibilities, adherence to ethical principals and sensitivity to a diverse patient population.

Evaluation Methods: 360 GRE, RR, NEX, CAL

1. Demonstrate respect for patients at all times, especially in circumstances where the behavior of the patient or family suggests lack of trust or anxiety in the health care system or providers.
2. Demonstrate honest and integrity by being punctual for rounds and conferences and by being up to date on all laboratory, radiographic, electrodiagnostic, and pathology results for patients.
3. Remain in the inpatient or outpatient care areas until all work is complete. Provide complete checkout information to the resident on call and those covering the weekends.
4. Be respectful and courteous to all staff members, attending faculty, fellow residents and health professionals from related disciplines.
5. Attend all required conferences.
6. Professional attire is required during duty hours.
7. Be mindful of patient confidentiality at all times.
8. Understand HIPAA mandates.

VI. **Systems-based Practice**, as manifested by actions that demonstrates awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Evaluation Methods: 360 GRE, RR

1. Understand the roles of various team members including social services, nursing staff, clerical staff, physical therapy, occupational therapy, speech pathology, pharmacy, and dietary in different practice settings.
2. Understand the community resources available for patients with neurological diseases.
3. Learn to optimize patient care across clinical settings regardless of socioeconomic and insurance status.

**Division of Child Neurology
University of Alabama Birmingham**

Learning Objectives for the PG-3 or PG-4 (1st year of fellowship):

The first year of a child neurology fellowship is spent working under the auspices of the Department of Neurology studying Adult Neurology. The fellow rotates on adult clinical services including General Neurology, Vascular and Critical Care, Epilepsy, Consult Service and Veteran's Administration Hospital. The Child Neurology fellow attends continuity clinic at the Veteran's Administration Hospital ½ day per week and the Child Neurology General Clinic on Friday mornings during the Adult Neurology year. The Child Neurology fellow also maintains his/her own continuity clinic (1/2 day/week) at Children's Hospital in which he/she follows a group of children with neurological disorders. This clinic is staffed by an attending child neurologist.

The Child Neurology fellow rotates with the Adult Neurology fellows for night call. Responsibilities are the same as for all other adult neurology fellows, including: on-call coverage for all neurology in-patients, admitting patients to all neurologic services, and consultations to other services. Patients are presented in morning report 3 days per week. Interesting cases are presented in detail at Chairman's Rounds once per week. Neurology Grand Rounds are held weekly.

Goals and Objectives: At the end of this year the Child Neurology fellow will be proficient in performing a neurologic exam on adults. The fellow will be able to develop a differential diagnosis of common neurologic disease affecting adults and appropriately use diagnostic tests. The fellow will be able to treat neurologic disease appropriately with supervision. The fellow will be able to retrieve information from medical databases electronically. The successful completion of these goals and objectives is based on evaluations completed by attending physician for each rotation.

**Division of Child Neurology
University of Alabama, Birmingham**

Learning Objectives for the PGY 4 Inpatient

The primary goals of the PGY 4 year are that the resident gain expertise in neurological examination and problem solving through appropriate history-taking, interpretation of physical findings, and neurological localization. The PGY 4 pediatric neurology resident should also gain expertise in the diagnosis and management of neurological emergencies and common outpatient neurological problems. Additionally, the resident should gain familiarity with supplemental neurodiagnostic modalities.

VII. Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Evaluation Methods: 360 Degree Global Rotation Evaluation (360 GRE), Resident In-service Training Exam (RITE), Record Review (RR), Conference Attendance Logs (CAL), Neurology Clinical Evaluation Exercises (NEX)

4. Learn to perform a complete history and physical examination with particular emphasis on the neurological examination on patients with neurological problems or potential neurological problems.
5. Understand the decision-making process concerning the timing and appropriateness of laboratory, radiographic, neuropsychological, and other imaging procedure testing. Gain a basic understanding of the role of neurodiagnostics in the practice of neurology.
6. Learn to evaluate and treat all categories of neurological diseases including:
 - a. Neurological emergencies such as status epilepticus, stroke, intracranial hemorrhage, spinal cord compression, meningitis, increased intracranial pressure, and myasthenic crisis.
 - b. Primary disorders of the central nervous system including acute, chronic, and degenerative processes.
 - c. Primary disorders of the peripheral nervous system including acute, chronic, and degenerative processes.
 - d. Primary disorders of muscle and neuromuscular junction.
 - e. Neurological complications of systemic disease.
 - f. Disorders that overlap between psychiatry and neurology.
 - g. Medical complications of neurological disease.

VIII. Medical Knowledge about established and evolving biomedical, clinical, and cognate sciences and the application of this knowledge to patient care.

Evaluation Methods: 360 GRE, RITE, CAL, NEX

1. Understand the biochemistry, neurophysiology and neuroanatomy that are the basis for normal neurological function.

2. Understand how disruption of normal function leads to pathology of the nervous system and muscle.
3. Know the presenting signs and symptoms of neurological problems.
4. Learn localization of a problem in the nervous system based on history and physical examination findings.
5. Learn to develop an appropriate differential diagnosis for neurological presentations.
6. Learn appropriate evaluation and treatment of neurological diseases in the inpatient and outpatient settings.
7. Understand the pharmacology of neurological therapeutics.
8. Learn appropriate indications for acute hospitalization.
9. Understand the functional recovery process and rehabilitation of neurological disorders.
10. Understand the course of chronic or progressive neurological disorders and where intervention and support of patients and/or families is possible.
11. Be familiar with the issue of psychosocial matters concerning community integration, adaptation and accessibility.

IX. **Practice-based Learning and Improvement** that involves the investigation and evaluation of their own patient care, appraisal and assimilation of the scientific evidence and improvements in patient care.

Evaluation Methods: 360 GRE, RR, RITE, CAL, NEX

1. Learn good documentation skills in inpatient and outpatient settings.
2. Maintain a log of patient encounters and procedures.
3. Keep a list of patients seen in the outpatient clinics requiring follow up on laboratory or other diagnostic testing and review with the attending physician as needed.
4. Perform literature searches on topics in neurology and share results with the attending physician and treatment team.
5. Present patients at appropriate clinical conferences for discussion of diagnostic, treatment and outcomes issues.
6. Be familiar with the evidenced-based practice guidelines under development by the AAN.
7. Attend all didactic and clinical conferences when required.

X. **Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families, and other health professionals.

Evaluation methods: 360 GRE, RR, NEX

1. Learn to direct team meetings and conferences as appropriate to level of training.
2. Document in a careful and concise fashion the findings of clinical evaluations.
3. Learn clear and concise order entry skills.
4. Participate and learn to direct patient/family conferences.
5. Learn appropriate use of consultants in the outpatient and inpatient settings.

6. Monitor the progress of patient care by frequent discussions with other health professionals involved in providing that care.
7. Evaluate each patient before attending rounds and develop an assessment and plan on each patient to be discussed with the attending physician.

XI. **Professionalism**, as manifested through a commitment to carry out professional responsibilities, adherence to ethical principals and sensitivity to a diverse patient population.

Evaluation Methods: 360 GRE, RR, NEX, CAL

1. Demonstrate respect for patients at all times, especially in circumstances where the behavior of the patient or family suggests lack of trust or anxiety in the health care system or providers.
2. Demonstrate honesty and integrity by being punctual for rounds and conferences and by being up to date on all laboratory, radiographic, electrodiagnostic, and pathology results for patients.
3. Remain in the inpatient or outpatient care areas until all work is complete. Provide complete checkout information to the resident on call and those covering the weekends.
4. Be respectful and courteous to all staff members, attending faculty, fellow residents and health professionals from related disciplines.
5. Attend all required conferences.
6. Professional attire is required during duty hours.
7. Be mindful of patient confidentiality at all times.
8. Understand HIPAA mandates.

XII. **Systems-based Practice**, as manifested by actions that demonstrates awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Evaluation Methods: 360 GRE, RR

1. Understand the roles of various team members including social services, nursing staff, clerical staff, physical therapy, occupational therapy, speech pathology, pharmacy, and dietary in different practice settings.
2. Understand the community resources available for patients with neurological diseases.
3. Learn to optimize patient care across clinical settings regardless of socioeconomic and insurance status.

**Division of Child Neurology
University of Alabama, Birmingham**

Learning Objectives for the PGY 5 Year

The educational goals for the final year of neurology residency training include gaining expertise in the independent assessment and management of patients with a wide variety of neurological disease, competency in the selection and interpretation of supplemental neurodiagnostic modalities, and the ability to take an active role in team leadership and clinical instruction. This year also provides elective time which the trainee may use to pursue an area of clinical interest or dedicate to research opportunities.

XIII. Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Evaluation Methods: 360 Degree Global Rotation Evaluation (360 GRE), Resident In-service Training Exam (RITE), Record Review (RR), Conference Attendance Logs (CAL), Neurology Clinical Evaluation Exercises (NEX)

7. Refine history and physical examination skills with particular emphasis on the neurological examination on patients with neurological problems or potential neurological problems.
8. Develop independence in the decision-making process concerning the timing and appropriateness of laboratory, radiographic, electrodiagnostic, neuropsychological, and other imaging procedure testing.
9. Refine capabilities in the selection, performance and interpretation of electrodiagnostic testing.
10. Refine skills in evaluating and treating all categories of neurological diseases including:
 - a. Neurological emergencies such as status epilepticus, stroke, intracranial hemorrhage, spinal cord compression, meningitis, increased intracranial pressure, and myasthenic crisis.
 - b. Primary disorders of the central nervous system including acute, chronic, and degenerative processes.
 - c. Primary disorders of the peripheral nervous system including acute, chronic, and degenerative processes.
 - d. Primary disorders of muscle and neuromuscular junction.
 - e. Neurological complications of systemic disease.
 - f. Disorders that overlap between psychiatry and neurology.
 - g. Medical complications of neurological disease.
11. Assume leadership with appropriate attending physician backup in the direction and management of the inpatient services.
12. Assume independence of function with appropriate attending physician backup in the management of patients in the clinic.

XIV. Medical Knowledge about established and evolving biomedical, clinical, and cognate sciences and the application of this knowledge to patient care.

Evaluation Methods: 360 GRE, RITE, CAL, NEX

1. Expand knowledge base in the biochemistry, neurophysiology and neuroanatomy that are the basis for normal neurological function.
2. Refine understand how disruption of normal function leads to pathology of the nervous system and muscle.
3. Refine localization skills in the nervous system based on history and physical examination findings.
4. Refine the development of the differential diagnosis for neurological presentations.
5. Expand the knowledge and skills concerning appropriate evaluation and treatment of neurological diseases in the inpatient and outpatient settings.
6. Expand knowledge of the pharmacology of neurological therapeutics.
7. Refine understanding of the functional recovery process and rehabilitation of neurological disorders.
8. Refine understanding of the course of chronic or progressive neurological disorders and where intervention and support of patients and/or families is possible.
9. Understand the complexities of psychosocial matters concerning community integration, adaptation and accessibility.
10. Refine capabilities in all these areas with increasing independence of function throughout the training period.
11. Continue involvement in research activity under the supervision of a faculty mentor.
12. Utilize elective time to further enhance career goals, research interests, and patient care skills.

XV. Practice-based Learning and Improvement that involves the investigation and evaluation of their own patient care, appraisal and assimilation of the scientific evidence and improvements in patient care.

Evaluation Methods: 360 GRE, RR, RITE, CAL

1. Refine documentation skills in inpatient and outpatient settings.
2. Maintain a log of patient encounters and procedures.
3. Keep a list of patients seen in the outpatient clinics requiring follow up on laboratory or other diagnostic testing and review with the attending physician as needed.
4. Perform literature searches on topics in neurology and share results with the attending physician and treatment team.
5. Direct clinical conferences for discussion of diagnostic, treatment and outcomes issues.
6. Be familiar with the evidenced-based practice guidelines under development by the AAN.
7. Attend all didactic and clinical conferences when required.
8. Apply newfound knowledge to the refinement of clinical and academic skills for the improvement of patient care and professional satisfaction.

XVI. Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

Evaluation methods: 360 GRE, RR, NEX

1. Direct team meetings and conferences.
2. Document in a careful and concise fashion the findings of clinical evaluations.
3. Monitor documentation compliance of more junior residents and students.
4. Practice clear and concise order entry skills.
5. Direct patient/family conferences
6. Learn appropriate use of consultants in the outpatient and inpatient settings.
7. Monitor the progress of patient care by frequent discussions with other health professionals involved in providing that care.
8. Monitor assessment and plan development by junior residents and students.
9. Be a good listener.
10. Refine effective teaching skills with junior residents and students.

XVII. Professionalism, as manifested through a commitment to carry out professional responsibilities, adherence to ethical principals and sensitivity to a diverse patient population.

Evaluation Methods: 360 GRE, RR, NEX, CAL

1. Demonstrate respect for patients at all times, especially in circumstances where the behavior of the patient or family suggests lack of trust or anxiety in the health care system or providers.
2. Demonstrate honest and integrity by being punctual for rounds and conferences and by being up to date on all laboratory, radiographic, electrodiagnostic, and pathology results for patients.
3. Remain in the inpatient or outpatient care areas until all work is complete. Provide complete checkout information to the resident on call and those covering the weekends.
4. Be respectful and courteous to all staff members, attending faculty, fellow residents and health professionals from related disciplines.
5. Be respectful of all junior residents and students.
6. Attend all required conferences.
7. Professional attire is required during duty hours.
8. Be mindful of patient confidentiality at all times.
9. Understand HIPAA mandates.

XVIII. Systems-based Practice, as manifested by actions that demonstrates awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Evaluation Methods: 360 GRE, RR

1. Understand the roles of various team members including social services, nursing staff, clerical staff, physical therapy, occupational therapy, speech pathology, pharmacy, and dietary in different practice settings.
2. Understand the community resources available for patients with neurological diseases.
3. Optimize patient care across clinical settings regardless of socioeconomic and insurance status.
4. Direct the activities of various members of the treatment and support team to maximize patient care and outcomes across settings.

Learning Objectives for the Outpatient Clinics

XIX. Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Evaluation Methods: 360 Degree Global Rotation Evaluation (360 GRE), Resident In-service Training Exam (RITE), Record Review (RR), Conference Attendance Logs (CAL), Neurology Clinical Evaluation Exercises (NEX)

13. Learn to perform a complete history and physical examination with particular emphasis on the neurological examination on patients with neurological problems or potential neurological problems presenting to the outpatient clinics. Refine this capability over the course of training.
14. Understand the decision-making process concerning the timing and appropriateness of laboratory, radiographic, electrodiagnostic, neuropsychological, and other imaging procedure testing in various outpatient settings. Learn to apply this knowledge independently.
15. Learn the principles of outpatient therapeutics across settings.
16. Learn to evaluate and treat all categories of neurological diseases in the outpatient setting including:
 - a. Neurological emergencies such as status epilepticus, stroke, intracranial hemorrhage, spinal cord compression, meningitis, increased intracranial pressure, and myasthenic crisis.
 - b. Primary disorders of the central nervous system including acute, chronic, and degenerative processes.
 - c. Primary disorders of the peripheral nervous system including acute, chronic, and degenerative processes.
 - d. Primary disorders of muscle and neuromuscular junction.
 - e. Neurological complications of systemic disease.
 - f. Disorders that overlap between psychiatry and neurology.
 - g. Medical complications of neurological disease.
 - h. Chronic and acute pain syndromes.

XX. Medical Knowledge about established and evolving biomedical, clinical, and cognate sciences and the application of this knowledge to patient care.

Evaluation Methods: 360 GRE, RITE, CAL, NEX

1. Understand the biochemistry, neurophysiology and neuroanatomy that are the basis for normal neurological function.
2. Understand how disruption of normal function leads to pathology of the nervous system and muscle.
3. Know the presenting signs and symptoms of neurological problems.

4. Learn localization of a problem in the nervous system based on history and physical examination findings.
5. Learn to develop an appropriate differential diagnosis for neurological presentations in the clinic.
6. Learn appropriate evaluation and treatment of neurological diseases in the outpatient setting.
7. Understand the pharmacology of neurological therapeutics in the outpatient setting.
8. Learn appropriate indications for acute hospitalization.
9. Understand the functional recovery process and rehabilitation of neurological disorders and follow this process over time.
10. Understand the course of chronic or progressive neurological disorders and where intervention and support of patients and/or families is possible.
11. Be familiar with the issue of psychosocial matters concerning community integration, adaptation and accessibility.
12. Refine capabilities in all these areas with increasing independence of function throughout the training period.

XXI. Practice-based Learning and Improvement that involves the investigation and evaluation of their own patient care, appraisal and assimilation of the scientific evidence and improvements in patient care.

Evaluation Methods: 360 GRE, RR, RITE, CAL

1. Learn good documentation skills in the outpatient setting.
2. Maintain a log of patient encounters and procedures.
3. Keep a list of patients seen in the outpatient clinics requiring follow up on laboratory or other diagnostic testing and review with the attending physician as needed.
4. Perform literature searches on topics in neurology and share results with the attending physician and other clinic attendees.
5. Present patients at appropriate clinical conferences for discussion of diagnostic, treatment and outcomes issues.
6. Be familiar with the evidenced-based practice guidelines under development by the AAN.
7. Attend all didactic and clinical conferences when required.
8. Learn to apply newfound knowledge to the refinement of clinical and academic skills for the improvement of patient care and professional satisfaction.

XXII. Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

Evaluation methods: 360 GRE, RR, NEX

1. Learn to direct team meetings and conferences as appropriate to level of training.
2. Document in a careful and concise fashion the findings of clinical evaluations.
3. Learn clear and concise order entry skills.
4. Participate and learn to direct patient/family conferences

5. Learn appropriate use of consultants in the outpatient setting.
6. Monitor the progress of patient care by frequent discussions with other health professionals involved in providing that care.
7. Evaluate each patient and develop an assessment and plan on each patient to be discussed with the attending physician.
8. Learn to be a good listener.

XXIII. Professionalism, as manifested through a commitment to carry out professional responsibilities, adherence to ethical principals and sensitivity to a diverse patient population.

Evaluation Methods: 360 GRE, RR, NEX, CAL

1. Demonstrate respect for patients at all times, especially in circumstances where the behavior of the patient or family suggests lack of trust or anxiety in the health care system or providers.
2. Demonstrate honest and integrity by being punctual for clinic and conferences and by being up to date on all laboratory, radiographic, electrodiagnostic, and pathology results for patients.
3. Remain in the outpatient care areas until all work is complete.
4. Be respectful and courteous to all staff members, attending faculty, fellow residents and health professionals from related disciplines.
5. Attend all required conferences.
6. Professional attire is required during duty hours.
7. Be mindful of patient confidentiality at all times.
8. Understand HIPAA mandates.

XXIV. Systems-based Practice, as manifested by actions that demonstrates awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Evaluation Methods: 360 GRE, RR

1. Understand the roles of various team members including social services, nursing staff, clerical staff, physical therapy, occupational therapy, speech pathology, pharmacy, and dietary in different practice settings.
2. Understand the community resources available for patients with neurological diseases.
3. Learn how resources available vary across setting and how to utilize each system for optimal patient care
4. Learn to optimize patient care across clinical settings regardless of socioeconomic and insurance status.

5. Over the course of training, learn leadership skill to direct the activities of various members of the treatment and support team to maximize patient care and outcomes across settings.

Learning objectives for the Neuromuscular Disease Rotation

XXV. Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Evaluation Methods: 360 Degree Global Rotation Evaluation (360 GRE), Resident In-service Training Exam (RITE), Record Review (RR), Conference Attendance Logs (CAL), Neurology Clinical Evaluation Exercises (NEX)

1. Learn to perform a complete history and physical examination with particular emphasis on the neuromuscular examination on patients with neuromuscular problems or potential neuromuscular problems.
2. Understand the decision-making process concerning the timing and appropriateness of laboratory, radiographic, electrodiagnostic, and other imaging procedure testing.
3. Learn the basic principles and techniques of the common nerve conduction tests and the basic interpretation of the nerve conduction data.
4. Learn the basic principles and techniques of the needle EMG and the basic interpretation of EMG data.
5. Gain an understanding of the advanced nerve conduction tests, the advanced EMG tests, the repetitive nerve stimulation tests, and the indications for such testing.
6. Learn to interpret visual, sensory and brainstem auditory evoked potential testing.
7. Observe nerve and muscle biopsy techniques and learn the indications for such testing.
8. Improve understanding of the neuropathologic correlates of neuromuscular disease by participation in nerve and muscle biopsy interpretation.
9. Learn to evaluate and treat all categories of neuromuscular diseases including:
 - a. intrinsic muscle disease
 - b. neuromuscular junction disorders
 - c. acute, sub-acute, and chronic peripheral neuropathies
 - d. plexopathies
 - e. radicular disorders
 - f. motor neuron disease

XXVI. Medical Knowledge about established and evolving biomedical, clinical, and cognate sciences and the application of this knowledge to patient care.

Evaluation Methods: 360 GRE, RITE, CAL, NEX

1. Understand the biochemistry, neurophysiology and neuroanatomy that are the basis for normal neuromuscular function.

2. Understand how disruption of normal function leads to pathology of the peripheral nervous system and muscle.
3. Know the presenting signs and symptoms of neuromuscular problems.
4. Learn localization of a problem in the peripheral nervous system based on history and physical examination findings.
5. Learn how electrodiagnostic studies can further localize a lesion and differentiate between different disease states.
6. Understand the basic science supporting electrodiagnostic testing.
7. Learn to develop an appropriate differential diagnosis for neuromuscular presentations.
8. Learn appropriate evaluation and treatment of neuromuscular diseases in the inpatient and outpatient settings.
9. Understand the pharmacology of neuromuscular therapeutics.
10. Learn appropriate indications for acute hospitalization for neuromuscular disease states.
11. Understand the functional recovery process and rehabilitation of neuromuscular disorders.
12. Understand the course of chronic or progressive neuromuscular disorders and where intervention and support of patients and/or families is possible.
13. Be familiar with the issue of psychosocial matters concerning community integration, adaptation and accessibility.

XXVII. Practice-based Learning and Improvement that involves the investigation and evaluation of their own patient care, appraisal and assimilation of the scientific evidence and improvements in patient care.

Evaluation Methods: 360 GRE, RR, RITE, CAL

1. Learn good documentation skills in inpatient and outpatient settings.
2. Maintain a log of patient encounters and procedures.
3. Perform literature searches on topics in neurology and share results with the attending physician and treatment team.
4. Present patients at appropriate clinical conferences for discussion of diagnostic, treatment and outcomes issues.
5. Be familiar with the evidenced-based practice guidelines under development by the AAN.
6. Attend all didactic and clinical conferences when required.
7. Learn to apply newfound knowledge to the refinement of clinical and academic skills for the improvement of patient care and professional satisfaction.

XXVIII. Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

Evaluation methods: 360 GRE, RR, NEX

1. Learn to direct team meetings and conferences as appropriate to level of training.

2. Document in a careful and concise fashion the findings of clinical evaluations.
3. Participate and learn to direct patient/family conferences
4. Learn appropriate use of consultants in the outpatient and inpatient settings.
5. Learn to be a good listener.
6. Learn to work with patients undergoing painful and frightening procedures in a gentle, caring and empathetic manner.

XXIX. Professionalism, as manifested through a commitment to carry out professional responsibilities, adherence to ethical principals and sensitivity to a diverse patient population.

Evaluation Methods: 360 GRE, RR, NEX, CAL

1. Demonstrate respect for patients at all times, especially in circumstances where the behavior of the patient or family suggests lack of trust or anxiety in the health care system or providers.
2. Demonstrate honest and integrity by being punctual for rounds and conferences and by being up to date on all laboratory, radiographic, electrodiagnostic, and pathology results for patients.
3. Remain in the inpatient or outpatient care areas until all work is complete. Provide complete checkout information to the resident on call and those covering the weekends.
4. Be respectful and courteous to all staff members, attending faculty, fellow residents and health professionals from related disciplines.
5. Attend all required conferences.
6. Professional attire is required during duty hours.
7. Be mindful of patient confidentiality at all times.
8. Understand HIPAA mandates.

XXX. Systems-based Practice, as manifested by actions that demonstrates awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Evaluation Methods: 360 GRE, RR

1. Understand the roles of various team members including social services, nursing staff, clerical staff, physical therapy, occupational therapy, speech pathology, pharmacy, and dietary in different practice settings.
2. Understand the community resources available for patients with neurological diseases.
3. Learn to optimize patient care across clinical settings regardless of socioeconomic and insurance status.
4. Learn leadership skills to direct the activities of various members of the treatment and support team to maximize patient care and outcomes across settings.

Learning Objectives for the Epilepsy Rotation

XXXI. Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Evaluation Methods: 360 Degree Global Rotation Evaluation (360 GRE), Resident In-service Training Exam (RITE), Record Review (RR), Conference Attendance Logs (CAL), Neurology Clinical Evaluation Exercises (NEX)

1. Learn to perform a complete history and physical examination with particular emphasis on the neurological examination on patients with seizures or possible seizures. Refine this capability over the course of training.
2. Understand the decision-making process concerning the timing and appropriateness of laboratory, radiographic, electrodiagnostic, neuropsychological, and other imaging procedure testing in patients with seizures or possible seizures. Learn to apply this knowledge independently.
3. Attend EEG reading sessions with the attending physician and/or fellow three days a week.
4. Learn the indications for routine EEG monitoring.
5. Learn the indications and technique of inpatient EEG/video monitoring.
6. Learn to evaluate, classify and treat seizure disorders including:
 - a. status epilepticus
 - b. simple seizures
 - c. complex partial seizures with or without generalization
 - d. primary generalized epilepsies
 - e. hereditary epilepsies
 - f. pseudoseizures

XXXII. Medical Knowledge about established and evolving biomedical, clinical, and cognate sciences and the application of this knowledge to patient care.

Evaluation Methods: 360 GRE, RITE, CAL, NEX

1. Understand the biochemistry, neurophysiology and neuroanatomy that are the basis for normal neurological function.
2. Understand how disruption of normal function leads to seizures.
3. Know the presenting signs and symptoms of seizures.
4. Learn localization of a problem in the nervous system based on history and physical examination findings.
5. Learn to develop an appropriate differential diagnosis for seizure presentations.
6. Learn appropriate evaluation and treatment of seizures in the inpatient and outpatient settings.

7. Understand the physiological basis for normal and abnormal EEG patterns.
8. Learn the characteristics of a normal adult EEG.
9. Be able to recognize common EEG abnormalities including focal and generalized epileptiform discharges, focal and generalized slow wave abnormalities, and coma patterns.
10. Know the indications for a brain death EEG and the criteria for electrocerebral silence.
11. Recognize common normal EEG variants.
12. Understand the pharmacology of seizure therapeutics including drug interactions, side effects, polypharmacy, when to initiate therapy and when to discontinue therapy.
13. Learn the principles of epilepsy surgery and the indications for such surgery.
14. Learn appropriate indications for acute hospitalization.
15. Understand the functional recovery process and rehabilitation of seizure disorders.
16. Understand the course of chronic or progressive neurological disorders and where intervention and support of patients and/or families is possible.
17. Be familiar with the issue of psychosocial matters concerning community integration, adaptation and accessibility for seizure patients.
18. Refine capabilities in all these areas with increasing independence of function throughout the training period.

XXXIII. Practice-based Learning and Improvement that involves the investigation and evaluation of their own patient care, appraisal and assimilation of the scientific evidence and improvements in patient care.

Evaluation Methods: 360 GRE, RR, RITE, CAL

1. Learn good documentation skills in inpatient and outpatient settings.
2. Maintain a log of patient encounters and procedures.
3. Perform literature searches on topics in neurology and share results with the attending physician and treatment team.
4. Present patients at appropriate clinical conferences for discussion of diagnostic, treatment and outcomes issues.
5. Be familiar with the evidenced-based practice guidelines under development by the AAN.
6. Attend all didactic and clinical conferences when required.
7. Learn to apply newfound knowledge to the refinement of clinical and academic skills for the improvement of patient care and professional satisfaction.

XXXIV. Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

Evaluation methods: 360 GRE, RR, NEX

1. Learn to direct team meetings and conferences as appropriate to level of training.
2. Document in a careful and concise fashion the findings of clinical evaluations.
3. Learn clear and concise order entry skills.

4. Participate and learn to direct patient/family conferences
5. Learn appropriate use of consultants in the outpatient and inpatient settings.
6. Monitor the progress of patient care by frequent discussions with other health professionals involved in providing that care.
7. Evaluate each patient before attending rounds and develop an assessment and plan on each patient to be discussed with the attending physician.
8. Learn to be a good listener.

XXXV. Professionalism, as manifested through a commitment to carry out professional responsibilities, adherence to ethical principals and sensitivity to a diverse patient population.

Evaluation Methods: 360 GRE, RR, NEX, CAL

1. Demonstrate respect for patients at all times, especially in circumstances where the behavior of the patient or family suggests lack of trust or anxiety in the health care system or providers.
2. Demonstrate honest and integrity by being punctual for rounds and conferences and by being up to date on all laboratory, radiographic, electrodiagnostic, and pathology results for patients.
3. Remain in the inpatient or outpatient care areas until all work is complete. Provide complete checkout information to the resident on call and those covering the weekends.
4. Be respectful and courteous to all staff members, attending faculty, fellow residents and health professionals from related disciplines.
5. Attend all required conferences.
6. Professional attire is required during duty hours.
7. Be mindful of patient confidentiality at all times.
8. Understand HIPAA mandates.

XXXVI. Systems-based Practice, as manifested by actions that demonstrates awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Evaluation Methods: 360 GRE, RR

1. Understand the roles of various team members including social services, nursing staff, clerical staff, physical therapy, occupational therapy, speech pathology, pharmacy, and dietary in different practice settings.
2. Understand the community resources available for patients with epilepsy.
3. Learn to optimize patient care across clinical settings regardless of socioeconomic and insurance status.
4. Over the course of training, learn leadership skill to direct the activities of various members of the treatment and support team to maximize patient care and outcomes across settings.

**Division of Child Neurology
University of Alabama, Birmingham**

Learning Objectives for Clinical Neuropathology Rotation

The educational goals of the Clinical Neuropathology Rotation are to master basic human neuroanatomy and embryologic development, to understand the basic pathophysiologic processes in the brain and their morphologic correlates, to diagnose the major diseases seen in surgical neuropathology, and to evaluate and diagnose diseases in whole brain specimens. Graded responsibility is allowed depending upon the trainee's daily performance.

XXXVII. Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Evaluation Methods: 360 Degree Global Rotation Evaluation (360 GRE), Resident In-service Training Exam (RITE), Conference Attendance Logs (CAL), Neurology Clinical Evaluation Exercises (NEX), Objective Slide Review (OSR), Case Conference Presentations (CCP)

1. Learn to gather pertinent patient history, physical findings and diagnostic evaluation and integrate these into the neuropathologic evaluation.
2. Learn to effectively communicate this information to surgical and pathology staff.
3. Learn to diagnose major diseases seen in surgical neuropathology
4. Learn to evaluate and diagnose disease in whole brain specimens.
5. Learn to correlate morphologic findings with clinical history.
6. Attend all frozen sections and review slides.
7. Review radiographic images of all tumor cases.
8. Review all case slides for Surgical Neuropathology prior to sign-out daily.
9. Attend Brain Cutting and review all brain autopsies.
10. Attend weekly Neuropathology Consultant's Conference.
11. Attend Dr. Gladson's monthly Neuropathology-Neurosurgery-Neurology Conference.
12. Attend weekly Neuropathology Autopsy Microscopic Conference.

XXXVIII. Medical Knowledge about established and evolving biomedical, clinical, and cognate sciences and the application of this knowledge to patient care.

Evaluation Methods: 360 GRE, RITE, CAL, NEX, OSR, CCP

1. Understand the neuroanatomy and embryology that are the basis for normal neurological function.
2. Refine understand how disruption of normal function leads to pathology of the nervous system and muscle.
3. Refine localization skills in the nervous system based on history and physical examination findings.
4. Learn to describe morphologic changes seen in specimens.

5. Learn the development of the differential diagnosis for neuropathologic specimens through correlation of clinical history, diagnostic evaluation and morphologic changes noted in specimens.
6. Attend didactic Kodachrome sessions as scheduled.
7. Review unknown histology slides as assigned and discuss with the attending physician as scheduled.

XXXIX. Practice-based Learning and Improvement that involves the investigation and evaluation of their own patient care, appraisal and assimilation of the scientific evidence and improvements in patient care.

Evaluation Methods: 360 GRE, RR, RITE, CAL

1. Learn documentation skills for neuropathology cases.
2. Maintain a log of patient diagnoses.
3. Perform literature searches on topics in neurology and neuropathology and share results with the attending physician.
4. Attend and present at conferences for discussion of diagnostic issues and clinical-pathologic correlation.
5. Attend all didactic and clinical conferences when required.
6. Apply newfound knowledge to the refinement of clinical and academic skills for the improvement of patient care and professional satisfaction.

XL. Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

Evaluation methods: 360 GRE, RR, NEX, CCP

1. Direct team meetings and conferences as delegated by the attending physician.
2. Document in a careful and concise fashion the findings of clinical and pathologic evaluations.
3. Learn appropriate use of and communication with consultants.
4. Refine presentation skills.
5. Learn to effectively interact with members of the team from different disciplines to maximize communication and patient care.

XLI. Professionalism, as manifested through a commitment to carry out professional responsibilities, adherence to ethical principals and sensitivity to a diverse patient population.

Evaluation Methods: 360 GRE, NEX, CAL

1. Demonstrate respect for patients at all times.

2. Demonstrate honest and integrity by being punctual for rounds and conferences and by being up to date on all laboratory, radiographic, electrodiagnostic, and pathology results for patients.
3. Remain in the inpatient or outpatient care areas until all work is complete.
4. Be respectful and courteous to all staff members, attending faculty, fellow residents and health professionals from related disciplines.
5. Be respectful of all junior residents and students.
6. Attend all required conferences.
7. Professional attire is required during duty hours.
8. Be mindful of patient confidentiality at all times.
9. Understand HIPAA mandates.

XLII. Systems-based Practice, as manifested by actions that demonstrates awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Evaluation Methods: 360 GRE, RR

1. Understand the roles of various team members including clerical staff, technical support staff, residents, and attending physicians from neuropathology and related disciplines.
2. Optimize patient care across clinical settings regardless of socioeconomic and insurance status.
3. Respect the activities of various members of the team to maximize patient care and outcomes across settings.

Learning Objectives for the Psychiatry Rotation

XLIII. Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Evaluation Methods: 360 Degree Global Rotation Evaluation (360 GRE), Resident In-service Training Exam (RITE), Record Review (RR), Conference Attendance Logs (CAL), Neurology Clinical Evaluation Exercises (NEX)

1. Learn to perform a complete history and physical examination with particular emphasis on the psychiatric examination on patients with potential psychiatric origin.
2. Gain expertise in the technical aspects of psychiatric examination.
3. Understand the decision-making process concerning the timing and appropriateness of laboratory, radiographic, and other imaging procedure testing.
4. Learn to evaluate and treat all categories of psychiatric disease.

XLIV. Medical Knowledge about established and evolving biomedical, clinical, and cognate sciences and the application of this knowledge to patient care.

Evaluation Methods: 360 GRE, RITE, CAL, NEX

1. Understand the biochemistry, neurophysiology and neuroanatomy that are the basis for normal psychiatric function.
2. Understand how disruption of normal function leads to pathology of this system.
3. Know the presenting signs and symptoms of psychiatric problems.
4. Learn localization of a problem in the nervous system based on history and physical examination findings.
5. Learn to develop an appropriate differential diagnosis for psychiatric presentations.
6. Learn appropriate evaluation and treatment of psychiatric diseases in the inpatient and outpatient settings.
7. Understand the pharmacology of psychiatric therapeutics.
8. Learn appropriate indications for acute hospitalization.
9. Understand the functional recovery process and rehabilitation of psychiatric disorders.
10. Understand the course of chronic or progressive psychiatric disorders and where intervention and support of patients and/or families is possible.
11. Be familiar with the issue of psychosocial matters concerning community integration, adaptation and accessibility.

XLV. Practice-based Learning and Improvement that involves the investigation and evaluation of their own patient care, appraisal and assimilation of the scientific evidence and improvements in patient care.

Evaluation Methods: 360 GRE, RR, RITE, CAL

1. Learn good documentation skills in inpatient and outpatient settings.
2. Maintain a log of patient encounters and procedures.
3. Perform literature searches on topics in psychiatry and share results with the attending physician and treatment team.
4. Present patients at appropriate clinical conferences for discussion of diagnostic, treatment and outcomes issues.
5. Attend all didactic and clinical conferences when required.

XLVI. Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

Evaluation methods: 360 GRE, RR, NEX

1. Learn to direct team meetings and conferences as appropriate to level of training.
2. Document in a careful and concise fashion the findings of clinical evaluations.
3. Learn clear and concise order entry skills.
4. Participate in and learn to direct patient/family conferences
5. Monitor the progress of patient care by frequent discussions with other health professionals involved in providing that care.

XLVII. Professionalism, as manifested through a commitment to carry out professional responsibilities, adherence to ethical principals and sensitivity to a diverse patient population.

Evaluation Methods: 360 GRE, RR, NEX, CAL

1. Demonstrate respect for patients at all times, especially in circumstances where the behavior of the patient or family suggests lack of trust or anxiety in the health care system or providers.
2. Demonstrate honest and integrity by being punctual for rounds and conferences and by being up to date on all laboratory, radiographic, electrodiagnostic, and pathology results for patients.
3. Remain in the inpatient or outpatient care areas until all work is complete. Provide complete checkout information to the resident on call and those covering the weekends.
4. Be respectful and courteous to all staff members, attending faculty, fellow residents and health professionals from related disciplines.
5. Attend all required conferences.
6. Professional attire is required during duty hours.
7. Be mindful of patient confidentiality at all times.
8. Understand HIPAA mandates.

XLVIII. Systems-based Practice, as manifested by actions that demonstrates awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Evaluation Methods: 360 GRE, RR

1. Understand the roles of various team members including social services, psychotherapists, psychologists, nursing staff, clerical staff, physical therapy, occupational therapy, speech pathology, pharmacy, and dietary in different practice settings.
2. Understand the community resources available for patients with psychiatric diseases.
3. Learn to optimize patient care across clinical settings regardless of socioeconomic and insurance status.

Fellow Duty Priority: Since the fellow will usually be assigned to two services (clinic and required or elective rotation), there will occasionally be times when the fellow must make a choice between the two. The following is a guideline for establishing priorities:

Highest priority- emergency situations in which the fellow is needed in patient care.

Second- clinic responsibilities for a scheduled time and scheduled patients.

Third- teaching conferences.

Conference	Day/Time	LOCATION
Neuroradiology	Monday, 3:30 pm	3 rd floor ACC, Children's Hospital
Neurology Grand Rounds	Tuesday, 8:00 am	2 nd floor West Pavilion, UAB Hospital
Pediatric Grand Rounds	Thursday, 12:00 pm	4 th floor, Children's Harbor Building
Child Neuro Fellows Didactic Conference	1 st and 3 rd Monday, 12:00 pm	Children's Harbor Library, Suite 311
Pediatric Morning Report	Monday-Friday, 8:00 am	PICU Conf Room, Children's Hospital
Child Neuro Journal Club	4 th Monday, 12:00pm	Children's Harbor Library, Suite 311
Child Neuro Fellow Case Conference	2 nd Monday, 12:00pm	Children's Harbor Library, Suite 311
Epilepsy Conference	Wednesday, 12:00pm	Children's Harbor Library, Suite 311

Continued emphasis on scholarship and learning is essential to the development and maturation of a child neurologist in training, so continuation of the conferences, case discussion, journal clubs, grand rounds, and basic science seminars is important throughout the entire training period and beyond. **The need to use electronic data management systems** continues to increase, so the trainee will be expected to appropriately access and use computer and internet-based resources.

Curriculum in Child Neurology University of Alabama at Birmingham

Overview:

Purpose: To provide a curriculum for training child neurologist.

The traditional track of two or three years of general pediatrics before neurology and child neurology training would provide the best general medicine preparation for child neurologists. Alternative entry pathways may be considered (see Training Requirement section).

Mentor/Program Director: An individual should be identified who will guide the trainee through all three years of this curriculum. The mentor should be a child neurologist intimately involved with training the candidate, and should be of sufficient professional stature and clinical expertise to serve as a role model and teacher. Additional mentors in subspecialty fields may also be identified. This individual (or group) is important for encouraging learning and scholarship.

The division of child neurology, in conjunction with the neurology department, and other departments or divisions of neuroscience as deemed necessary, should adequately encompass the neurosciences and clinical aspects of adult and child neurology.

Residency Review Committee (RRC) Guidelines: The curriculum will adhere to current RRC guidelines for programs and for candidates.

CURRICULUM ORGANIZATION / STRUCTURE

The curriculum will follow RRC guidelines to allow the acquisition of fundamental knowledge and skills in neurology and specific skills in child neurology. RRC guidelines require 12 months of clinical adult neurology, 12 months of clinical child neurology and 12 months referred to as the flexible year.. Typically, the first 12 months will be in adult neurology and the remaining 24 months may be interdigitated.

A. Adult neurology – 12 months required

- Inpatient
 - Primary neurology service
 - Consultation

- Outpatient
 - Clinic
 - Adult neurology – ½ day per week

- Child neurology – 2 ½ days per week
- Emergency department consultation

B. Child neurology – 12 months (at least 4 months in the ambulatory setting)

C. Child Psychiatry – 1 month

D. Concentrated Training in Applied or Basic Neuroscience – 2 months

E. Elective Time – 3 months minimum (allowed 9 months in UAB Child Neuro fellowship)

Essential to child neurology training is acquiring basic science information as it applies to the nervous system and becoming familiar with the “classical” approach to clinical neurology.

1. **Neuroanatomy / Neuropathology**

Primary early emphasis on basic neuroanatomy with some clinicopathological correlations and brain cutting. Combining these two disciplines is a suggestion that could be modified to fit the local university and departmental structures.

2. **Neurophysiology / EEG / EMG**

Primary early emphasis in the first month on basic neurophysiology / theory with introduction to applications using these techniques. This introduction will be supplemented later in the curriculum, and could be further enhanced with fellowship training.

3. **Neuropharmacology / Neurochemistry**

4. **Elective/Selective** - Electives are chosen by the candidate. Selectives are less optional and may be strongly recommended by the mentor or program director as essential to training.

The above list of basic science disciplines is the foundation for understanding neurology. A series of formal rotations in electives or “selectives” designed to provide detailed exposure to neuroanatomy, neurophysiology, and neuropathology should be included in the first 12 months of the curriculum. Neuropharmacology and neurochemistry might be learned best through formal, regularly-scheduled didactic seminars that make up a part of the ongoing conference schedule suggested as an integral part of the three-year curriculum. Basic science exposure should begin early in the trainee’s three-year curriculum to enhance understanding of diseases affecting the nervous system. Correlating basic science and clinical information would be a desirable method for learning, so early exposure to clinico-pathologic, clinico-physiologic and clinico-anatomic correlations would be ideal. Such correlations could occur with actual and hypothetical patients. The above time recommendations are suggestions and could

be modified to fit what is most compatible with the local university and departmental structures.

Research Survey Course – Highly encouraged during PG Year 4 and 5.

The Center for Clinical and Translation Science (CCTS) offers a fall session of the Vocabulary of Clinical and Translational Science Online Course. This course is designed for residents, fellows, graduate and professional students, and others interested in pursuing a career in clinical and translational science. The course is generally available September 10-November 17, 2012. For more information and registration, please logon to the website:

<http://www.uab.edu/ccts/TrainingAndEduc/programs/Pages/Vocabulary-of-Clinical-and-Translational-Science.aspx>

CURRICULUM CONTENT

A. Clinical

The clinical content of the curriculum should facilitate learning adult and child neurology in the broadest sense. That is, trainees should be exposed to and be responsible for patients with a comprehensive and representative variety of neurological disorders. There should be a concerted effort to correlate clinical information with relevant applied and basic science information.

1. Patient-oriented approach to neurological disorders

a. History taking

The patient history is the cornerstone of diagnosing and treating neurological disorders. Many such disorders are not observed by the physician because episodes are intermittent or complaints are subjective. Furthermore, the circumstances preceding and following certain events are important for fully understanding the event or symptom. Therefore, the neurologist and child neurologist must be consummate historians.

b. Neurological examination

Many neurological symptoms are accompanied by signs observable by the careful examiner. In fact, patients are often unaware of physical abnormalities that yield clues to a diagnosis. Thus, a careful physical and neurological examination is an essential extension of the history that must never be overlooked or downplayed. The neurological examination is often more sensitive than any ancillary diagnostic procedure in localizing lesions and determining diagnoses. Complete familiarity with the following is essential:

- 1) Higher cortical function (normal, confusion, delirium, dementia)

- 2) Cranial nerves
- 3) Motor function
- 4) Sensation
- 5) Reflex function
- 6) Gait and stance
- 7) Special circumstances
 - a) The comatose patient
 - b) The psychiatric patient
- 8) Developmentally appropriate application of above principles to infants and children of all ages

c. Lesion (anatomic) localization and pathophysiologic correlation

The logical result of a careful history and physical examination, lesion localization is of the utmost importance in leading the clinician toward a reasonable differential diagnosis and formulation of a plan for ancillary diagnostic procedures, if necessary.

Understanding normal neurophysiology is essential to explaining the basis of disease. At minimum, working knowledge of the anatomy, connectivity, and physiology of the following is essential:

- 1) Motor system (motor unit and corticospinal tract)
 - a) Differentiate between disorders causing weakness, incoordination, and involuntary movements
 - b) Differentiate between upper motor neuron and lower motor neuron dysfunction by using the distribution of weakness, muscle bulk, muscle tone, muscle strength, fasciculations, sensory changes, and reflex changes
 - c) List the components of the motor unit
 - d) Compare and contrast the common LMN clinical syndromes involving motor neuron, peripheral nerve, neuromuscular junction, and muscle by symptoms of weakness, muscle bulk, muscle tone, muscle strength, fasciculations, sensory changes, reflex changes, and muscle enzymes.

e) Differentiate between the common UMN syndromes of hemiparesis, paraparesis, and quadriparesis by distribution and define and discuss the pathophysiology of:

spasticity

superficial and deep reflexes

tone

apraxia

f) Differentiate between upper motor neuron and lower motor neuron lesions.

g) Brachial plexopathy

2) Basal ganglia

Define and differentiate involuntary movements:

Tremor

Spasticity vs. rigidity

Hyperkinetic movement disorders

Chorea, athetosis, hemiballismus

Dystonia

Myoclonus

Tics

Hypokinetic movement disorders

3) Cerebellum

Discuss the clinical findings and pathophysiology for midline vs. hemispheric cerebellar disorders:

Define ataxia, dysmetria, dysdiadochokinesia, titubation, rebound

Define wide-based gait and discuss anatomical localization

4) Sensory pathways

a) Differentiate between central and peripheral sensory disorders by distribution, modalities affected, associated findings, and the presence or absence of pain

b) Describe the following sensory disorders and discuss localization:
cortical sensory loss

hemihypesthesia

thalamic pain

sensory level

Brown-Sequard syndrome

dissociated sensory loss

c) Describe these peripheral sensorimotor disorders and discuss localization:

radiculopathy

mononeuropathy

stocking-glove distribution of sensory loss

anesthesia, hypesthesia, paresthesia, dysesthesia

brachial plexopathy

5) Cranial nerves

6) Hypothalamus and pituitary

7) Limbic system

8) Cerebral cortex

9) Visual system

a) Localize the lesion causing:

homonymous hemianopsia (congruent, non-congruent)

bitemporal field defect

superior and inferior quadrantanopsia

central scotoma

enlarged blind spot

afferent papillary defect

- b) Differentiate between papilledema and optic neuritis
- c) Describe innervation and action of each of the extraocular muscles
- d) Describe anatomy of Parinaud's (dorsal midbrain) syndrome
- e) Distinguish between supranuclear gaze palsy and nuclear/intranuclear palsy
- f) Describe nystagmus (jerk, pendular)
- g) Evaluate ptosis, including Horner's syndrome

10) Auditory system

11) Autonomic system

12) Cerebrospinal fluid pathways

13) Neurophysiology of the above systems including understanding CNS neurotransmission; neuromuscular transmission; muscle contractile processes; neuronal excitation, inhibition, and release; cortical activation and inhibition; seizure production

d. Formulation of differential diagnosis

The goal of obtaining a thorough history, performing a detailed physical examination, and localizing the lesion is establishing a differential diagnosis. This carefully-prepared list of diagnostic possibilities directs the clinician toward a rational plan for using ancillary diagnostic procedures, if necessary, to include or exclude specific disorders on the differential list.

a) Evaluation and management plan

Treating patients with neurological disorders is the primary goal of a child neurologist. The trainee should learn the appropriate standard of care for

neurological disorders and should constantly be vigilant for evolution in thinking and practice regarding treating these disorders. This requires continuous learning, and it requires sufficient practical experience with patients (including explaining these concepts of diagnosis and treatment to patients and to their families).

In addition to being thoroughly competent in the art and science of history and physical examination in formulating an evaluation and management plan, the trainee should also be completely familiar with the indications, techniques, contraindications, and risks of the following neurodiagnostic tests:

- a) Lumbar puncture
 - b) EEG
 - c) CT
 - d) MRI and MRA
 - e) EMG and NCS
 - f) Visual, auditory, brainstem, and somatosensory evoked potentials
 - g) Cerebral and spinal angiography
 - h) Nerve and muscle biopsy
- b) Specific symptoms (the patient-oriented approach)
- a) Paroxysmal disorders
 - a) Distinguish:
 - seizures from syncope
 - jitteriness from seizures
 - seizures and epilepsy
 - typical from atypical febrile seizures
 - b) Understand international classification of seizures
 - c) List common causes of seizures in:
 - neonates
 - infants
 - older children
 - d) Describe routine evaluation and treatment indications in new onset seizures

- e) Know standard dosing and side-effects of anticonvulsants
- f) Define status epilepticus
 - outlined initial evaluation and management
 - list medications and doses to treat status
- g) Sleep disorders
 - define parasomnias, narcolepsy, cataplexy, and sleep apnea
- b) Coma and altered consciousness

Describe major disease categories that cause lethargy and coma (e.g., metabolic, infectious, traumatic, vascular, etc.)
- c) Increased intracranial pressure
 - a) Describe differences between communicating and noncommunicating hydrocephalus and give etiologic examples of each
 - b) Discuss side effects of ventriculoperitoneal and ventriculoatrial shunts
 - c) Describe the most common brain tumors in children
 - d) Discuss the presentation of supratentorial and infratentorial brain tumors
 - e) List the most common organisms causing bacterial meningitis in neonates and children
 - f) List factors commonly predisposing to pyogenic brain abscess in children
 - g) Discuss pseudotumor cerebri
 - h) Discuss metabolic and toxic causes of increased ICP
 - i) Discuss treatment of acute and chronic increased ICP
- d) Ataxia and other gait disorders

Discuss differential diagnosis, evaluation, and management of acute and subacute ataxia in children

- e) Movement disorders
 - a) Discuss differential diagnosis of chorea
 - b) List medications that can cause movement disorders
 - c) Define Tourette syndrome, comorbid associations, and treatment
- f) Headache
 - a) Describe the headache features (onset, location, character, duration, precipitants, associated symptoms, and family history) of migraine, increased intracranial pressure, and tension
 - b) Be familiar with the International Classification of Headache criteria
 - c) List indications and medications for headache treatment
- g) Mental Retardation
 - a) Discuss normal motor and cognitive development
 - b) Discuss consequences of tobacco, alcohol, and other commonly abused drugs (marijuana, cocaine, and heroin)
 - c) Discuss evaluation and treatment
 - d) Discuss common manifestations of neurofibromatosis and tuberous sclerosis
- h) Mental and motor regression

Be familiar with:

 - a) Lysosomal storage disorders
 - b) Peroxisomal disorders
 - c) Mitochondrial disorders
 - d) Aminoacidopathies
 - e) Organic acidopathies
 - f) Disorders of carbohydrate metabolism

- g) Chromosomal disorders
- h) Dysmorphic syndromes
- i) Weakness (including peripheral, central, and weakness caused by cranial nerve dysfunction)

Be familiar with these peripheral nervous system disorders:

- a) Spinal muscular atrophies
- b) Duchenne muscular dystrophy
- c) Myasthenia gravis
- d) Acute inflammatory demyelinating polyneuropathy
- e) Peripheral neuropathy (hereditary and nonhereditary)

Be familiar with the following central causes of weakness in children:

- a) Stroke
- b) Spinal dysraphism
- c) Cerebral palsy
- d) Discuss significance of sacral dimple or hairy patch,

Be familiar with Neurocutaneous disorders

- a) diagnosis and management of common neurocutaneous syndromes including neurofibromatosis, tuberous sclerosis and Sturge Weber syndrome
- b) recognition of rarer neurocutaneous syndromes including Ataxia-telangiectasia, Hypomelanosis of Ito and Incontinentia pigmenti

Be familiar with disorders of cranial nerve function:

- a) Discuss causes of facial weakness and evaluation and treatment of Bell palsy
- j) Disorders of sensation (including somatosensory, discriminative, position, vibration, smell, hearing, and taste; peripheral and central causes)
 - a) Discuss evaluation of child with hearing loss

- b) Discuss evaluation of vertigo
- k) Visual disorders
 - a) Discuss congenital nystagmus and spasmus nutans
 - b) List causes for congenital cataracts
 - c) Describe several causes of acquired ophthalmoplegia
 - d) Discuss the meaning of optic atrophy
 - e) Discuss causes of strabismus
- l) Hearing disorders
- m) Abnormalities of head growth
 - a) Discuss causes of evaluation of macrocephaly and microcephaly
 - b) Discuss craniosynostosis
- n) Disorders unique to newborn infants
- o) Learning disorders and disorders of higher cognitive function
 - a) List common causes of learning disabilities
 - b) Discuss approach to a child with:
 - delayed speech
 - impaired attention
 - poor academic performance

2. Categories of disease and specific disorders

a) Neurological disorders of adulthood

Common disorders occurring in adulthood such as epilepsy, headache, stroke, dementia, multiple sclerosis, movement disorders, neuromuscular disorders, etc. should make up the bulk of patients in the first 12 months of this curriculum. The trainee should also be familiar with less common neurological disorders even if he or she is

unlikely to see them often or at all. Such exposure can occur through case conferences, clinico-pathological correlation conferences, and by reading current literature (paper and electronic) and textbooks of neurology.

Specific categories of disorders

Stroke and vascular disorders

Dementia, degenerative disorders, and disorders of higher cortical fxn

Neurobehavioral disorders

Movement disorders

Multiple sclerosis and other demyelinating diseases

Neuromuscular disorders

Headache

Seizures, epilepsy, and epilepsy syndromes

Nonepileptic paroxysmal disorders

Sleep disorders

Infections involving the nervous system

Neoplasms involving the nervous system

Genetic and metabolic disorders involving the nervous system

Autonomic nervous system disorders

Visual disorders

Toxic and nutritional disorders affecting the nervous system

Neurologic manifestations of systemic disease

Neurotrauma

Spinal cord disorders

Non-neurologic systemic disorders affecting the nervous system

b. Neurological disorders of childhood

Common disorders including various types seizures and epilepsy syndrome, nonepileptic paroxysmal disorders, headache, learning/developmental/cognitive disorders, disorders causing mental retardation, neuromuscular disorders, acute encephalopathies, infections of the nervous system, disorders of the term and perterm infant, neurotrauma, complications of systemic disease (heart, kidney, lung, liver, etc), and neurogenetic and neurometabolic disorders, etc should make up the bulk of patients during this portion of the curriculum. More common disorders should be proportionately represented, but attempts should be made to familiarize the trainee with less common disorders to prepare him or her for the consultative role as a child neurology specialist. Case conferences, clinico-pathological correlations, and reading should be a major adjunct to seeing patients and should expand the trainee's knowledge of both common and less familiar disorders. The following list of specific disorders is in reality a list of categories of specific disorders. No attempt will be made to name specific disorders; as such a list would be exhaustive and would invariably omit disorders as important as the ones listed. The trainee, however, is expected to be exposed to an exhaustive number of different specific disorders representing the broad spectrum of conditions seen in a child neurology practice.

Specific categories of disorders

Disorders of brain and spinal cord development

Disorders unique to infants (neonatal neurology)

Infections involving the nervous system

Cerebrovascular disorders

Cerebral palsy

Syndromes associated with mental retardation

Chromosomal disorders affecting the nervous system

Metabolic and neurodegenerative diseases

Nutritional and toxin-associated disorders of the nervous system

Neurocutaneous syndromes

Neoplasms of the nervous system

Neuroendocrine disorders

Seizures, epilepsy, and epilepsy syndromes

Nonepileptic paroxysmal disorders

Sleep disorders

Movement disorders

Headache

Neuromuscular diseases

Disorders of the autonomic nervous system

Disorders of learning and behavior

Spinal cord disorders

Disorders of vision

Neurological complications of systemic disease

Brain injury, brain death, coma, and the persistent vegetative state

c. Concepts essential to the child neurology trainee (should be presented in the basic and clinical curriculum)

1. Brain and spinal cord development /embryology
2. CNS plasticity

3. Normal infant and child development
4. Genetic principles
 - a. Mendelian genetics
 - b. Molecular genetics
 - c. Dysmorphology /syndrome recognition
 - d. Chromosomal disorders
 - e. Mitochondrial disorders
5. Brain death and the persistent vegetative state in infants and children

Final thought / comments

d. Learning / teaching methods

Hands-on (direct patient contact and responsibility)

Being mentored (“apprenticeship”)

Reading (books, journals, internet)

Teaching student and fellows

Research (clinical and case studies - - basic research not appropriate on this track)

Writing (case reports, reviews, clinical research reports)

Audiovisual (slides, video, interactive computer)

Lifelong learning: establish good habits now (hopefully long before beginning fellowship)

e. Evaluation of trainee

Evaluations are performed in an electronic evaluation software program: www.e-value.net

Residents are evaluated monthly by all supervising instructors that worked with the resident. Residents have 24 hour access to their evaluations from any computer with internet access. User ids and passwords are issued during the first month of rotations.

Residents are required to evaluate all supervising instructors on a monthly basis. Residents are also required to evaluate the training program on a quarterly and bi-annual basis.

2007-2008 Salary and Benefits:

Salary:

PGY-1	42,118
PGY-2	43,308
PGY-3	44,920
PGY-4	46,350
PGY-5	48,297
PGY-6	49,629
PGY-7	52,270

Benefits:

At no cost:

Professional liability insurance

Group term life insurance

Long-term disability insurance

Accidental death and dismemberment insurance

Hospital parking

Pagers, lab coats, laundering

Photocopying privileges

Internet access/Medline database

Access to exercise facilities

Counseling services through UAB Faculty and Staff Assistance Program

Other Benefits:

Health insurance for fellows, spouses and dependent children provided at favorable rates

Dental insurance at favorable rates

Family leave

Annual allowance of 1,000 for medical licenses, memberships, books, travel

Vacation Policy:

Fellows are given 3 weeks of paid vacation per year. An accrual form must be submitted to HR monthly.

The three weeks of vacation include sick and personal time. It does not carry forward to the next academic year. Any unused vacation will expire at the end of each 12-month training period. Vacation time unused at the time of termination is not paid out.

Vacation time should be requested at least one month in advance in writing or by email. The request should be directed to the program director and the physician attending for the time requested. Please include a copy of all correspondence to the office manager. All time out of the office should be clearly recorded on the individual fellow's Outlook calendar for reference and documentation purposes.

Time off other than vacation must be requested in writing and approved by the program director. This applies to requests for personal reasons and for professional activities (i.e. conferences and board preparations).

If the resident exceeds the allowed amount of time, the time must be made up. As a result, their end date will be extended. This also applies to residents who start after the July 1st official start of the academic year.

All residents are eligible for the Medical Leave Act. A request form must be completed and submitted to program coordinator.

Criteria for Advancement

CRITERIA FOR ADVANCEMENT/PROMOTION/RETENTION OF FELLOWS IN THE DEPARTMENT OF PEDIATRICS DIVISION OF NEUROLOGY AT THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

The decision to promote a fellow from PG2 to PG3 and from PG3 to PG4 and graduation shall be determined by the fellowship program director with the advice of the faculty of the department.

Educational Expectations

The parameters that will be used to evaluate a fellow's competence and/or readiness for advancement to the next PG level are:

- a. **Fund of medical knowledge-** Medical knowledge is evaluated by observation of fellow clinic and cases presented at fellow conference.
- b. **Practice based learning-** is evaluated by improvements in ability to formulate patient diagnoses and the research of scientific evidence for improvement.
- c. **Systems based practice-** is determined by the awareness and responsiveness the fellow has for the health care system and the utilization of resources
- d. **History and Physical-** is evaluated for thoroughness, billing compliance, and legibility.
- e. **Therapeutic management** evaluation is based on responsiveness to follow up patient care plans.
- f. **Record keeping-** The organization of patient records, licensures, CV, and conference attendance.
- g. **Patient care-** is observed by faculty and evaluated based on fellow ability to understand the patient's problem and implement the best course of treatment
- h. **Professional attitude-** is evaluated by the fellows' ability to prioritize time, punctuality, adherence to ethical principles, and sensitivity to a diverse patient population.
- i. **Interpersonal and Communication Skills-** Evaluated on the utilization of skills that result in effective information exchange and teaming with patients, their families, and other health professionals for optimal patient care

Overall Clinical Competence- is measured by the fellow's ability to meet all criteria.

A fellow must document acceptable progress in each of these areas to be maintained and/or promoted in the fellowship program. In addition, the fellow must be judged competent to supervise other fellows and act with limited independence.

Disciplinary Action

A fellow will have disciplinary actions taken or failure to promote to the next PG level based on:

- A. Deficiency in one of the educational expectations
- B. Conflict with one of the educational expectations
- C. Failure to show progress in one of the educational expectations

Other Fellow Physician Responsibilities:

In-Service Examination: The American Board of Psychiatry and Neurology in-service exam is required each spring for all fellows. It is used as an adjunct to aid evaluation of progress.

Principles of Medical Ethics: The medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility not only to patients, but also to society, to other health professionals, and to self. The following Principles adopted by the American Association are laws, but standards of conduct which define the essentials of honorable behavior for the physician.

- A. A physician shall be dedicated to providing competent medical service with compassion and respect for human dignity.
- B. A physician shall deal honestly with patients and colleagues, and strive to expose those physicians deficient in character or competence, or who engage in fraud or deception.
- C. A Physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient.

Professional Conduct:

Private Practice by fellows is prohibited. In the care of patients the fellow will serve as a primary physician, but always under the supervision of an attending physician.

Moonlighting by fellows is discouraged but if the fellow is in good academic standing, a limited amount of moonlighting may be approved by the division director. Moonlighting activities are not to interfere with the clinical responsibilities of the child neurology fellow.

Gratuities. The solicitation of gratuities is strictly prohibited as unprofessional conduct. The acceptance of unsolicited gratuities is not prohibited, but good judgment should indicate that they be of nominal value only.

Personal Conduct. All fellows should conduct themselves in a professional manner. No fellow will in any way engage in personal or professional activities that would give the appearance of entering into private practice.

Attire. Fellows are expected to dress in a professional manner. A name badge should be worn during all patient contact. Clean scrubs are permitted if worn with a white coat. Ties are encouraged for male fellows.

Pagers and Cell Phones: A pager will be supplied for fellow use. Fellows should be available by pager during normal work hours and when on call overnight. Fellows are not expected to have their pagers on 24 hours per day, 7 days per week when not on call but should be available a substantial portion of that time for patient care needs. A cellular telephone is provided for on-call use and is shared between the residents and fellows taking call that month.

DISCIPLINARY PROCEDURES

The Division of Child Neurology utilizes the Policy and Procedure instituted by UAB Graduate Medical Education.

A. BREACH OF PATIENT CONFIDENTIALITY BY A RESIDENT

Any allegation of breach of patient confidentiality by a resident is reviewed and investigated by the Patient Confidentiality Committee which consists of three members of the House Staff Council. After thorough review of the matter, if the Patient Confidentiality Committee feels there was a breach of patient confidentiality, the resident's program director will be notified. Further disciplinary action will be at the discretion of the program director. These procedures are subject to the Hearings and Appeals Procedures described in this manual. A resident may request a hearing in accordance with the Hearings and Appeals Procedures described in this manual.

B. ACADEMIC PROBATION

The program director shall be authorized to place a resident on academic probation. Grounds for academic probation include performance judged to be unsatisfactory for the resident's level of training, unprofessional attitudes or conduct, or failure to comply with institutional and/or departmental policies and procedures. In all such cases, the program director shall provide the resident and Associate Executive Director with written notification of such action which delineates specific reasons for the action, any previous counseling provided concerning the deficiency, the period of the probational status, requirements for removal of probationary status, and action to be taken should the resident fail to meet the requirements for removal of probationary status. Should a resident fail to comply with the requirements for removal of probationary status, the program director shall have authority to continue the resident's probationary status, require the resident to repeat specific portions of the educational program, or suspend or revoke the resident's appointment.

C. SUSPENSION OR REVOCATION OF APPOINTMENT

1. Temporary Suspension: The program director shall be authorized to suspend a resident's privileges for disciplinary purposes that are less urgent than those warranting

permanent recall of privileges. Grounds for temporary suspension of privileges include violations of the Rules and Regulations of the Hospital, unprofessional conduct, and violations of medical records requirements. In all such cases, the resident and the Associate Executive Director shall be notified in writing by the director. An opportunity for the resident concerned to have a hearing shall be afforded as provided in these policies. The Associate Executive Director shall so notify the resident in writing. Otherwise, the associate Executive Director will act upon the program director's recommendation.

2. Revocation of Resident Appointment: In all cases in which revocation of a resident's appointment has been recommended by the program director of a clinical department, the resident and the Associate Executive Director shall be notified in writing by the director. An opportunity for the resident concerned to have a hearing shall be afforded as provided in these policies. If the resident wishes a hearing, he/she must submit a written request to the Chairman, Dean's Council for Graduate Medical Education within ten days after receipt of the notification letter. Otherwise, the Associate Executive Director will act upon the program director's recommendation.

**Policy on Supervision of Residents
Division of Child Neurology
University of Alabama at Birmingham**

1. All patient care is supervised by qualified faculty.
2. The Division of Child Neurology faculty will provide education, training and experience in an atmosphere of mutual respect between instructor and resident so that residents will be stimulated and prepared to apply acquired knowledge and skills independently.
3. The faculty will provide an environment that promotes the acquisition of knowledge, skills, clinical judgment and attitudes essential to the practice of child neurology.
4. The faculty will provide guidance and counseling in interpersonal skills, effective communication skills, and professionalism.
5. The faculty will work to ensure the residents assume responsibility, act responsibly with integrity, demonstrate a commitment to excellence and ethical principles including confidentiality of patient information and informed consent, demonstrate respect with regards for the needs of patients and society that supercedes self-interest, and work effectively as a member of a health-care team.
6. The residents are provided with rapid and reliable systems for communicating with faculty by alpha-numeric pager, overhead page and/or a direct mobile phone.

Fellow Grievances, Issues, Concerns, and Confidentiality:

Due to the small size of the fellow compliment a variety of measures have been implemented to provide child neurology fellows with appropriate resources for confidential grievances, issues, and concerns.

Dr. Pierre Fequiere is our designated liaison. He is quite comfortable addressing concerns a fellow might have with the fellowship program director and/or the division director as appropriate to maintain desired level of confidentiality.

Fellows are highly encouraged to identify a mentor from the child neurology faculty that they feel comfortable addressing concerns.

Dr. David Kimberlin is also a designated departmental resident/fellow liaison and he is nearby and readily available to all Pediatric Residents and Fellows.

Evaluations of faculty are compiled with the Department of Pediatric Residents to maintain full anonymity as well. This is another mechanism that can be used to give valuable feedback regarding faculty without fear of retaliation.

FELLOW EVALUATIONS

Fellows will be evaluated monthly by supervisory faculty. Any significant problems will be reviewed with fellow. Evaluations are based on Personal and Professional skills as well as ACGME General Competencies. The evaluations are available via the internet, www.e-value.net at any time. The Program Director meets with each fellow quarterly to review goals, objectives, and evaluations.

Fellow competency will be evaluated for each of the following objectives:

- j. **Fund of medical knowledge-** Medical knowledge is evaluated by observation of fellow clinic and cases presented at fellow conference.
- k. **Practice based learning-** is evaluated by improvements in ability to formulate patient diagnoses and the research of scientific evidence for improvement.
- l. **Systems based practice-** is determined by the awareness and responsiveness the fellow has for the health care system and the utilization of resources
- m. **History and Physical-** is evaluated for thoroughness, billing compliance, and legibility.
- n. **Therapeutic management** evaluation is based on responsiveness to follow up patient care plans.
- o. **Record keeping-** The organization of patient records, licensures, CV, and conference attendance.
- p. **Patient care-** is observed by faculty and evaluated based on fellow ability to understand the patient's problem and implement the best course of treatment
- q. **Professional attitude-** is evaluated by the fellows' ability to prioritize time, punctuality, adherence to ethical principles, and sensitivity to a diverse patient population.
- r. **Interpersonal and Communication Skills-**Evaluated on the utilization of skills that result in effective information exchange and teaming with patients, their families, and other health professionals for optimal patient care.
- s. **Overall Clinical Competence-** is measured by the fellow's ability to meet all criteria.

- **Fellows are evaluated by the attending and all supervising physicians monthly.**
- **Fellows are required to evaluate the attending and supervising physicians on a monthly basis.**
- **Fellows are required to evaluate the program semi-annually.**
- **Fellows are required to evaluate and be evaluated by their peers.**
- **Fellows are also evaluated by healthcare professionals and patients.**
- **Final evaluations are performed in writing by the program director and discussed with each fellow at the end of the training period.**