AMERICAN ACADEMY OF NEUROLOGY
CHILD NEUROLOGY
FELLOWSHIP CORE CURRICULUM

ACGME Requirements: It is imperative that users of this document must first be familiar with ACGME requirements for training in Child Neurology. Suggestions within this document will be within the context of current ACGME requirements as established by the ACGME for programs and for candidates. This document is not a substitute for ACGME requirements. Care has been taken to ensure that this document does not conflict with ACGME requirements. In the event that anything in this document conflicts with ACGME requirements, the user must follow the ACGME program requirements for Child Neurology training.

Overview:

Purpose: To develop a curriculum for training child neurologists for the practice of child neurology.

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 planning to practice child neurology. However, there are three acceptable pathways for candidates to obtain their required two years of training prerequisites.

Will limit training comments to the final three years of training:

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 should 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. If too small or isolated, the trainee's experience may not be sufficient.

This outline has two major subdivisions:

I. Curriculum organization / structure

II. Curriculum content

I. CURRICULUM ORGANIZATION / STRUCTURE

The curriculum should be divided into roughly two halves; with the first half devoted to teaching the candidate the foundational skills in neurology; the second half should be devoted primarily to application of the skills necessary to practice neurology and child neurology. RRC guidelines require 12 months of clinical adult neurology, 12 months referred to as the flexible year, and 12 months on clinical child neurology. In this proposed structure, the flexible year would be incorporated into both the first and second halves of the curriculum.

A. Basic neurology and clinical adult neurology (18 months)

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 which is best acquired by seeing adult patients. So, the first 18 months of training should be devoted to the following disciplines:

1. **Neuroanatomy / Neuropathology – 3 months (duration not an ACGME requirement)**

   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 – 3 months (duration not an ACGME requirement)**

   Primary early emphasis in the first months 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 – ongoing**

The above list of basic science disciplines are the foundation for understanding neurology. A series of formal 3 month rotations designed to provide detailed exposure to neuroanatomy, neurophysiology, and neuropathology should be included in the first 18 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.

4. **Clinical adult neurology – 12 months required***

- Inpatient

- Primary neurology service
- Consultation

- Outpatient

- Clinic – RRC requirement is a continuity clinic each week for 3 years.

- Emergency department consultation

While caring for patients, the trainee should also be exposed to all pertinent ancillary diagnostic procedures, including lumbar puncture, EEG/evoked potentials, EMG/NCS, neuro-CT/MRI/angiography/ultrasonography.

Because continuity of clinical care in essential to learning and to the practice of medicine, the child neurology trainee should also have regular continuity clinics in adult and child neurology during the first 18 months of training. During the second 18 months of training, emphasis should be on child neurology continuity clinic as as well as outpatient subspecialty areas requiring a team approach to the patient (pediatric rehabilitation medicine, developmental/behavioral pediatrics).

5. **Seminars and Conferences***

As a part of both the basic and clinical curriculum, trainees should attend and have progressively increasing responsibility for regular conferences including clinical case discussions, basic science topical conferences, grand rounds, and other didactic conferences as deemed necessary. Topics should include neuropathology (gross, microscopic, and clinical), clinical neruophysiology, neuroradiology, neuro-ophthalmology, cognitive development, neuromuscular disease, epilepsy, movement disorders, critical care, neuroimmunology, infectious disease, neuro-otology, neuroimaging, neurogenetics, neuro-oncology, pain management, and general neurology and child neurology.

The resident should also learn about major developments in both the basic and clinical sciences relating to child neurology. Residents should attend periodic seminars, journal clubs, lectures, didactic courses, and meetings of local, regional, and national neurological societies.

B. Applied neurology and clinical child neurology (18 months)

The ultimate goal of this curriculum is to train child neurologists for the practice of child neurology. Essential to this purpose are expertise in all aspects of clinical child neurology itself and proficiency in performing and interpreting necessary ancillary diagnostic procedures, including lumbar puncture, EEG/evoked potentials, EMG/NCS, and emphasis on interpreting neuroimaging studies.

1. **EEG/Evoked potentials/Neurophysiology – 1 month (duration not an ACGME requirement)**

The candidate will already have had substantial exposure to these applied techniques in the first 18 months (see above). He or she should also participate in these procedures on his or her patients throughout the three years of training. Alternatively, the candidate could have a regularly-scheduled EEG reading time during each rotation so that the trainee has more or less continuous exposure to this modality. Proficiency might best be accomplished this way. A problem with 1 month rotations is we cannot predict if that month will be busy or not or if the pathology will be great enough. In the course of a year we can assume the trainee will see the mundane and the rare and become proficient and not be burned out by mere intensity or repetition. This one-month block could then be used as elective/selective time.

2. **EMG/NCS/Neurophysiology – 1 month (duration not an ACGME requirement)**

The candidate will already have had substantial exposure to these techniques in the first 18 months (see above). He or she should also participate in these procedures on his or her patients throughout the three years of training. As with EEG, the trainee might benefit from more or less continuous exposure to these techniques throughout the last 18 months rather than having a one month block exposure. Again, this month could then be used as elective/selective time.

3. **Electives / Selectives* - 4 months (6 months if EEG and EMG are ongoing rather than one-month blocks)**

Electives are chosen by the candidate. Selectives are less optional and may be strongly recommended by the mentor, program director, or ACGME as essential to training. The curriculum content section (II) below contains a partial list of electives (section II.D.3) and selectives. Others could be added if deemed appropriate.

4. **Clinical child neurology – 12 months required***

- Inpatient – inpatient experiences should not preclude outpatient activity
    - Routine- both consultative and primary responsibility
    - Intensive Care
    - Newborn nursery
    - Neonatal intensive care
- Outpatient – except for intensive electives, should occur concomitantly with inpatient experience. The outpatient experience should involve a long- term continuity clinic which occurs regardless of candidate's rotation. Emphasis should be placed on development, behavior, rehabilitation, cognition, and eduacational issues.

- Emergency department (evaluating acutely ill children with neurologic symptoms and signs)—usually in conjunction with inpatient rotation

- General child neurology continuity clinic – ½ day per week

- Clinics requiring or benefiting from a team approach to patient management – ½ day clinics once or twice per month

  - Neuromuscular disease

  - Neurorehabilitation

  - Developmental disorders

  - Behavior disorders / child psychiatry / neuropsychology- at least one month fte

Participation in outpatient clinics should not preclude ongoing involvement in inpatient and consultative child neurology activities. They should be performed in addition to—not in place of—the other activities. If, however, an inpatient activity on the general child neurology service is too busy to allow time for areas such as development, behavior, or neuromuscular, special attention should be given to provide time away from inpatient responsibilities for the trainee to obtain essential experience in these outpatient areas.

Comments:

Activities listed above and below that are followed by an asterisk (*) are listed specifically in the ACGME requirements and should be included in the curriculum structure. ACGME requirements should be consulted to ensure that nothing has been overlooked.

To optimize time, we suggest **concurrent training agendas** (i.e. AM and PM sessions with different activities planned; e.g., am rounds, noon conf, pm EEG or EMG)

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 discussions, 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 will likely increase, so the trainee should be expected to learn how to use the computer and network to enhance learning., and to be familiar with appropriate diagnostic and procedural coding.

II. CURRICULUM CONTENT

Preliminary comments:

Specific areas that need to be addressed because many feel inadequately prepared in these areas: behavioral and developmental disorders (ADD and mimickers thereof, psychiatric disorders, disorders of higher cortical function, neuropsychological testing).

The medicolegal interface will affect all trainees, so education about and exposure to the many aspects of this interface are essential (expert witness, risk minimization, confidentiality issues, interaction with hostile patients and their attorneys, etc).

A. Basic neurosciences*

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

B. Applied neurology and neurosciences*

1. EEG/Evoked potentials
2. EMG/NCS; muscle biopsy, nerve biopsy
3. Neuroradiology / Neuroimaging

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

6. Neuroepidemiology and statistics

7. Bioethics*

8. Awareness of cost-effectiveness of evaluation and treatment

9. End-of-life issues*

   a. Terminal and palliative care

   b. Pain relief

   c. Psychological support for patient and family

   d.

10. evaluation of published literature and research methodology.

D. Clinical

The clinical content of the curriculum should facilitate learning clinical adult and clinical 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 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 by 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, delerium, 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, 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

Dexterity and motor planning

f) Differentiate between UMN and LMN facial weakness (Bell palsy)

g) *Brachial plexopathy*

2) Basal ganglia

Define and differentiate involuntary movements:

Tremor (resting, postural, action)

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,
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:*

      Coritcal sensory loss

      Hemihypesthesia

      Thalamic pain

      Sensory level

      Brown-Sequard syndrome

      Dissociated sensory loss

   c) *Describe these peripheral sensorimotor disorders and discuss localization:*

      Radiculopathy

      Mononeuropathy, polyneuropathy

      Stocking-glove distribution of sensory loss

      Anesthesia, hypesthesia, paresthesia, dysesthesia

      Aphasia, apraxia, dementia

      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
Enlarged blind spot

Afferent pupillary defect

b) Differentiate between papilledema and optic neuritis

c) Describe innervation and action of each of the extracular muscles

d) Describe anatomy of Parinaud's (dorsal midbrain) syndrome

e) Distinguish between supranuclear gaze and 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.

e. Evaluation and management plan*

Treating patients with neurological disorders is the primary goal of a practicing clinical 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, interpretation, techniques, contraindications, and risks of the following neurodiagnostic tests:

1) Lumbar puncture
2) EEG
3) CT
4) MRI and MRA
5) EMG and NCS
6) Visual, auditory, brainstem, and somatosensory evoked potentials
7) Cerebral and spinal angiography
8) Nerve and muscle biopsy

f. Specific symptoms (the patient-oriented approach)

1) 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:

- *neonate*
- *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

- *outline initial evaluation and management*
- *list medications and doses to treat status*

g) Sleep disorders

- *define parasomnias, narcolepsy, cataplexy, and sleep apnea*

2) Coma and altered consciousness

Describe major disease categories that cause lethargy and coma (e.g., metabolic, infectious, traumatic, vascular, etc.)

3)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 abcess in children*

g) *Discuss pseudotumor cerebri*

h) *Discuss metabolic and toxic causes of increased ICP*

i) *Discuss treatment of acute and chronic increased ICP*

4) Ataxia and other gait disorders

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

5) Movement disorders

a) *Discuss differential diagnosis of chorea*

b) *List medications that can cause movement disorders*

c) *Define Tourette syndrome, comorbid associations, and treatment*

6) Headache

a) *Describe the headache features (onset, location, character, duration, precipitants, associated syndromes, 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

7) 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 common manifestations of neurofibromatosis and tuberous sclerosis

8) Mental and motor regression

Be familiar with:

a) Lysosomal storage disorders

b) Peroxisomal disorders

c) Mitochondrial disorders

d) Amino acidopathies

e) Organic acidopathies

f) Disorders of carbohydrate metabolism

g) Chromosomal disorders

h) Dysmorphic syndromes

9) 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, hairy patch, port wine stain*

Be familiar with disorders of cranial nerve function:

a) *Discuss causes of facial weakness and evaluation and treatment of Bells palsy*

10) Disorders of sensation (including somatosensory, discriminative, position, vibration, smell, and taste; peripheral and central causes)

a) *Discuss eval of child with hearing loss*

b) *Discuss eval of vertigo*

11) 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*

12) Hearing disorders

13) Abnormalities of head growth

a) *Discuss causes and evaluation of macrocephaly and microcephaly*

b) *Discuss craniosynostosis*

14) Disorders unique to newborn infants

15) 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*

16) Speech and language disorders

17) Behavioral disorders

Discuss approach to evaluation, differential diagnosis, and treatment

2. **Categories of disease and specific disorders**

a. Neurological disorders of adulthood

Common disorders occuring 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

Sensory 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 of seizures and epilepsy syndromes, 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 preterm infant, neurotrauma, complications of systemic disease (heart, kidney, lung, liver, etc), and neurogenetic and neurometablic 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, it 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

3. **Clinical electives**

   a. Neuro-ophthalmology

   b. Neurosurgery (experience required by ACGME, but not formal rotation)*

c. Neuroradiology

d. Child psychiatry / Neuropsychiatry / Neuropsychology (required 1 month rotation in child and adolescent psychiatry per ACGME)

e. Developmental / Behavioral neurology

f. Pediatric neurorehabiliation (experience required by ACGME, but not formal rotation)*

g. Outpatient clinic subspecialties

Final thoughts / comments

Learning / teaching methods

Hands-on (direct patient contact and responsibility)

Being mentored ("apprenticeship")

Reading (books, journals, internet)

Teaching students and residents

Identify and interpret good research studies

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

Writing (case reports, reviews, clinical research reports)

Presentations, including audiovisuals (slides, video, interactive computer)

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

Evaluation of trainee

This should be a continuous process.

Subjective: from instructors, primarily mentor or group of mentors, but also from peers and junior residents and students

Objective: Currently available tools include the yearly in-service training exam and the written board exam.

The product of this curriculum:

We are not differentiating between academicians and private practitioners with these recommendations. We are simply making recommendations for a curriculum for preparing child neurologists for the practice of child neurology, whether that occurs in an academic center or in a private practice. We have not discussed pros and cons of academics versus private practice, nor have we discussed training of basic research-oriented academicians. However, certain trainees will be drawn to academic careers in basic or clinical research in child neurology. If so, modification of the last year should prepare that person to begin an investigative/research career, followed by appropriate laboratory or fellowship training.

Since it is unlikely that anyone in the future can be a "triple threat" (teaching, research, and clinical service) due to funding and time limitations, we should identify those with strong clinical and tutorial skills and encourage them to be clinician/teachers. These individuals should have the tools to be self-sustaining and employable UPON GRADUATION, and if need be pursue special interests while contributing to a department's activities.

We may not have the luxury of finding people with pediatrics and neurology training, research training, and electrophysiological skills who are willing to join an academic department at an entering assistant professor level and expect such individuals to see patients, write grants, and do EMGs—all for an academic salary. Therefore we need to state up front our opinions regarding the current state of the health care climate to make it seem that our new curriculum is not merely a stepping stone but a finished, polished stone—ready for practice, academic or priviate—without needing yet another fellowship. This may sound redundant, but we are concerned that we do not have the resources to support a protracted training period for most candidates.