



**ACGME International**

**Advanced Specialty Program Requirements for  
Graduate Medical Education in  
Child Neurology  
(Pediatrics)**

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**Int. Introduction**

*Background and Intent: Programs must achieve and maintain Foundational Accreditation according to the ACGME-I Foundational Requirements prior to receiving Advanced Specialty Accreditation. The Advanced Specialty Requirements noted below complement the ACGME-I Foundational Requirements. For each section, the Advanced Specialty Requirements should be considered together with the Foundational Requirements.*

**Int. I. Definition and Scope of the Specialty**

Child neurology is the subspecialty of pediatrics that comprises diagnosis, evaluation, management, and advocacy for infants, children, adolescents, and young adults with primary or secondary disorders of the peripheral and central nervous systems.

**Int. II. Duration of Education**

Int. II.A. The educational program in child neurology must be 36 or 48 months in length.

**I. Institution**

**I.A. Sponsoring Institution**

I.A.1. A fellowship in child neurology must function as an integral part of an ACGME-I-accredited residency in pediatrics.

I.A.1.a) There must be an affiliation with an ACGME-I-accredited neurology residency program.

I.A.1.b) The child neurology program should be geographically proximate to the affiliated pediatrics residency program.

I.A.2. The educational program in child neurology must not negatively affect the education of residents in the affiliated pediatrics or neurology residency programs.

**I.B. Participating Sites**

See International Foundational Requirements, Section I.B.

**II. Program Personnel and Resources**

**II.A. Program Director**

- II.A.1. The program director must demonstrate a record of mentoring or guiding fellows in the acquisition of competence in the clinical, teaching, research, quality improvement, and advocacy skills pertinent to the discipline.
- II.A.2. The program director must ensure that each fellow:
- II.A.2.a) is provided with mentorship in development of the necessary clinical, educational, scholarship, and administrative skills; and,
  - II.A.2.b) documents experience in procedures.
- II.A.2.b).(1) The program director must ensure that such documentation is available for review.
- II.A.3. The program director must coordinate, with the program directors of the pediatrics residency, and affiliated residency and subspecialty fellowship programs, the incorporation of the ACGME-I Competencies into fellowship education to foster consistent expectations for fellows' achievement and faculty members' evaluation processes.
- II.A.4. Meetings with the program directors of the pediatrics residency and all pediatric subspecialty programs should take place at least semiannually.
- II.A.4.a) There must be documentation of these meetings.
  - II.A.4.b) These meetings should address a departmental approach to common educational issues and concerns that may include core curriculum, the ACGME-I Competencies, and evaluation.
- II.A.5. The fellowship program director must have the authority and responsibility to set and adjust the clinical responsibilities, and ensure that fellows have appropriate clinical responsibilities and an appropriate patient load.
- II.A.6. The program director must monitor fellow stress, including mental or emotional conditions inhibiting performance of learning, and drug- or alcohol-related dysfunction.
- II.A.6.a) Situations that demand excess service or that consistently produce undesirable stress on fellows must be recognized and resolved.
- II.A.7. The program director must approve and monitor the quality of the curriculum in adult neurology.

## **II.B. Faculty**

- II.B.1. To ensure the quality of the education and scholarly activity of the program, and to provide adequate supervision of fellows, there must be at least two child neurology faculty members, including the program director.

- II.B.2. Faculty members must encourage and support fellows in scholarly activities.
- II.B.2.a) This must include mentoring fellows in the application of scientific principles, epidemiology, biostatistics, and evidence-based medicine to the clinical care of patients.
- II.B.2.b) Scholarly activities must be in basic science, clinical care, education, health policy, health services, patient safety, or quality improvement with implications for the field of child neurology.
- II.B.3. Qualified faculty members with expertise in the disciplines related to child neurology and neurology should be available, including:
- II.B.3.a) child and adolescent psychiatry;
- II.B.3.b) clinical neurophysiology;
- II.B.3.c) cognitive development;
- II.B.3.d) critical care medicine, adult and pediatric;
- II.B.3.e) infectious disease, adult and pediatric;
- II.B.3.f) neonatal neurology;
- II.B.3.g) neurogenetics;
- II.B.3.h) neuroimaging;
- II.B.3.i) neuroimmunology;
- II.B.3.j) neuromuscular disorders;
- II.B.3.k) neuro-oncology;
- II.B.3.l) neuro-ophthalmology; and,
- II.B.3.m) pain management.
- II.B.4. Consultants with expertise in adult neurology should be available for transition care of young adults.

## **II.C. Other Program Personnel**

See International Foundational Requirements, Section II.C.

## **II.D. Resources**

- II.D.1. Facilities and services, including comprehensive laboratory, pathology, and imaging services and electrophysiological studies must be available.

- II.D.2. An adequate number and variety of child and adult neurology patients with both short- and long-term neurological problems and diversified as to age and gender must be available to provide a broad educational experience for the fellows.
- II.D.3. A sufficient number of patients must be available in inpatient and outpatient settings to meet the educational needs of the program.

### **III. Fellow Appointment**

#### **III.A. Eligibility Criteria**

- III.A.1. Prior to appointment in the program, fellows should have completed an ACGME-I-accredited residency program in pediatrics, or a pediatric residency program acceptable to the Sponsoring Institution's Graduate Medical Education Committee.

#### **III.B. Number of Fellows**

See International Foundational Requirements, Section III.B.

### **IV. Specialty-Specific Educational Program**

#### **IV.A. ACGME-I Competencies**

- IV.A.1. The program must integrate the following ACGME-I Competencies into the curriculum.

- IV.A.1.a) Professionalism

- IV.A.1.a).(1) Fellows must demonstrate a commitment to professionalism and an adherence to ethical principles, including:

- IV.A.1.a).(1).(a) trustworthiness that makes colleagues feel secure when a fellow is responsible for the care of patients;

- IV.A.1.a).(1).(b) leadership skills that enhance team function, the learning environment, and/or the health care delivery system/environment to improve patient care; and,

- IV.A.1.a).(1).(c) the capacity to recognize that ambiguity is part of clinical medicine and to respond by utilizing appropriate resources in dealing with uncertainty.

- IV.A.1.b) Patient Care and Procedural Skills

- IV.A.1.b).(1) Fellows must provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
- IV.A.1.b).(1).(a) Fellows must demonstrate competence in the clinical skills needed in child neurology, including:
- IV.A.1.b).(1).(a).(i) providing consultation, performing a history and physical examination, making informed diagnostic and therapeutic decisions that result in optimal clinical judgement, and developing and carrying out management plans;
- IV.A.1.b).(1).(a).(ii) providing transfer of care that ensures seamless transitions, counseling patients and patients' families, using information technology to optimize patient care, and providing appropriate role modeling and supervision;
- IV.A.1.b).(1).(a).(iii) providing for or coordinating with a medical home for patients with complex and chronic diseases;
- IV.A.1.b).(1).(a).(iv) conducting a thorough neurological examination, to include organizing and recoding data;
- IV.A.1.b).(1).(a).(v) recognizing psychiatric disorders in children and adolescents, and using the consultation and referral of mental health providers;
- IV.A.1.b).(1).(a).(vi) managing neurological disorders interacting with psychiatric disorders;
- IV.A.1.b).(1).(a).(vii) managing pediatric patients with acute neurological disorders in an intensive care unit and an emergency department;
- IV.A.1.b).(1).(a).(viii) managing infants, children, and adolescents with common and complex neurologic disorders, to include headaches, epilepsy, pediatric stroke, and neurometabolic and neurogenetic problems; and,
- IV.A.1.b).(1).(a).(ix) the use of appropriate and compassionate methods of terminal palliative care, to include adequate pain management.

- IV.A.1.b).(1).(b) Fellows must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the practice of child neurology. Fellows must:
- IV.A.1.b).(1).(b).(i) competently use and interpret the results of laboratory tests and imaging; and,
- IV.A.1.b).(1).(b).(ii) competently use and interpret the results of neurodiagnostic tests.
- IV.A.1.c) Medical Knowledge
- IV.A.1.c).(1) Fellows must demonstrate knowledge of established and evolving biomedical clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Fellows must demonstrate knowledge of:
- IV.A.1.c).(1).(a) biostatistics, bioethics, clinical and laboratory research methodology, study design, preparation of applications for funding and/or approval of clinical research protocols, critical literature review, principles of evidence-based medicine, ethical principles involving clinical research, and teaching methods;
- IV.A.1.c).(1).(b) the psychological aspects of the patient-physician relationship, and the importance of personal, social, and cultural factors in disease processes and their clinical expression;
- IV.A.1.c).(1).(c) the basic principles of psychopathology, common psychiatric diagnosis and therapies, and the indications for and common complications of psychiatry drugs;
- IV.A.1.c).(1).(d) the basic principles of rehabilitation for neurological disorders, including pediatric neurological disorders;
- IV.A.1.c).(1).(e) the use of principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for children with neurologic disorders; and,
- IV.A.1.c).(1).(f) the basic sciences on which clinical child neurology is founded, through application of this knowledge in the care of their patients.

IV.A.1.c).(1).(f).(i) This must include epidemiology and statistics, genetics, immunology, molecular biology, neural and behavioral development, neuroanatomy, neurochemistry, neuroimaging, neuropathology, neuropharmacology, neurophysiology, and neuropsychology.

IV.A.1.d) Practice-based Learning and Improvement

IV.A.1.d).(1) Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.

IV.A.1.e) Interpersonal and Communication Skills

IV.A.1.e).(1) Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Fellows must demonstrate:

IV.A.1.e).(1).(a) skill in teaching both individuals and groups of learners in clinical settings, classrooms, lectures, and seminars, as well as by electronic and print modalities;

IV.A.1.e).(1).(b) skill in providing feedback to learners and assessing educational outcomes; and,

IV.A.1.e).(1).(c) the ability to provide psychosocial support and counseling for patients and patients' family members about terminal palliative care.

IV.A.1.f) Systems-based Practice

IV.A.1.f).(1) Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the social determinates of health, as well as the ability to call effectively on other resources in the system to produce optimal care.

## **IV.B. Regularly Scheduled Educational Activities**

IV.B.1. Fellows must have a formally-structured educational program in the clinical and basic sciences related to child neurology.

IV.B.1.a) The program must utilize didactic and clinical experience.



- IV.B.1.a).(1) Clinical neurology faculty members must supervise and direct clinical teaching rounds.
- IV.B.1.a).(2) Clinical teaching rounds must occur at least five days per week.
- IV.B.1.b) Child neurology conferences must occur regularly and involve active participation by the fellows in planning and implementation.
- IV.B.1.c) Fellow education must include instruction in:
  - IV.B.1.c).(1) basic and fundamental disciplines, as appropriate to child neurology, such as anatomy, physiology, biochemistry, embryology, pathology, microbiology, pharmacology, immunology, genetics, and nutrition/metabolism;
  - IV.B.1.c).(2) pathophysiology of disease, reviews of recent advances in clinical medicine and biomedical research, and conferences dealing with bioethics, complications, end-of-life care, palliation and death, and the scientific, ethical, and legal implications of confidentiality and informed consent; and,
    - IV.B.1.c).(2).(a) This should include relationships between physicians and with patients, patients' families, allied health professionals, and society at large.
    - IV.B.1.c).(3) the economics of health care and current health care management issues, such as cost-effective patient care, practice management, preventive care, population health, quality improvement, resource allocation, and clinical outcomes.
- IV.B.2. The curriculum should include teaching in the following disciplines:
  - IV.B.2.a) cerebrovascular disease;
  - IV.B.2.b) clinical neurophysiology;
  - IV.B.2.c) cognitive and behavioral development;
  - IV.B.2.d) critical care;
  - IV.B.2.e) epilepsy;
  - IV.B.2.f) general and child neurology;
  - IV.B.2.g) infectious disease;
  - IV.B.2.h) movement disorders;

- IV.B.2.i) neurogenetics;
  - IV.B.2.j) neuroimaging;
  - IV.B.2.k) neuroimmunology;
  - IV.B.2.l) neurometabolism;
  - IV.B.2.m) neuromuscular disease;
  - IV.B.2.n) neuro-oncology;
  - IV.B.2.o) neuro-ophthalmology;
  - IV.B.2.p) neuro-otology;
  - IV.B.2.q) neuropathology;
  - IV.B.2.r) neuroradiology; and,
  - IV.B.2.s) pain management.
- IV.B.3. There must be gross and microscopic pathology conferences and clinical pathology conferences.

#### **IV.C. Clinical Experiences**

- IV.C.1. For programs that are 36 months in length, fellows must have at least six months of adult neurology experience, including:
- IV.C.1.a) at least two months of inpatient adult neurology where fellows manage patients admitted to an inpatient service requiring neurologic care;
  - IV.C.1.b) at least two months of outpatient adult neurology;
  - IV.C.1.c) at least two months of adult neurology elective experiences; and,
  - IV.C.1.d) no more than two months of clinical experience in treatment of adult stroke in an inpatient or outpatient setting.
- IV.C.2. For programs that are 48 months in length, fellows must have at least eight months of adult neurology experience, including:
- IV.C.2.a) at least three months of inpatient adult neurology where fellows manage patients admitted to an inpatient service requiring neurologic care;
  - IV.C.2.b) at least three months of outpatient adult neurology;
  - IV.C.2.c) at least two months of adult neurology elective experiences; and,

- IV.C.2.d) no more than four months of clinical experience in treatment of adult stroke in an inpatient or outpatient setting.
- IV.C.3. For programs that are 36 months in length, fellows must have at least 24 months of child neurology experience, including:
  - IV.C.3.a) at least 18 months of inpatient child neurology experience;
  - IV.C.3.b) outpatient child neurology experience; and,
  - IV.C.3.c) elective experiences with assignments that accommodate individual fellow interests.
- IV.C.4. For programs that are 48 months in length, fellows must have at least 34 months of child neurology experiences, including:
  - IV.C.4.a) at least 24 months of inpatient child neurology experience;
  - IV.C.4.b) outpatient child neurology experience; and,
  - IV.C.4.c) elective experiences with assignments that accommodate individual fellow interests.
- IV.C.5. Fellows must have at least one month of experience in child and adolescent psychiatry.
- IV.C.6. Fellows must have at least one month of experience in pediatric neurophysiology.
- IV.C.7. Fellows must have at least one month of experience in pediatric neuroradiology.
- IV.C.8. Fellows must have at least one month of experience in neuro-ophthalmology.
- IV.C.9. During inpatient rotations in child neurology, fellows must have:
  - IV.C.9.a) management responsibility for hospitalized patients with neurological disorders, including pediatric patients with acute neurological disorders, in an intensive care unit and in an emergency department;
  - IV.C.9.b) experience in the evaluation and management of patients with disorders of the nervous system requiring surgical management; and,
  - IV.C.9.c) an assignment on a consultation service to the medical, surgical, and psychiatric services.

- IV.C.10. Fellows must have responsibility, supervised by one or more members of the child neurology faculty, for providing longitudinal care to a panel of patients throughout the educational program.
- IV.C.10.a) The panel of patients must be representative of the types of neurological conditions that fellows are likely to encounter once they complete their educational program.
- IV.C.10.b) Fellows should attend longitudinal/continuity clinic at least one half-day weekly throughout the duration of the program.

**IV.D. Scholarly Activity**

IV.D.1. Fellows' Scholarly Activity

- IV.D.1.a) The program must have a core curriculum in research and scholarship.
  - IV.D.1.a).(1) Where appropriate, the curriculum should be a collaborative effort involving all pediatric subspecialty programs at the institution.
  - IV.D.1.b) The program must provide a Scholarship Oversight Committee for each fellow to oversee and evaluate the fellow's progress as related to scholarly activity.
    - IV.D.1.b).(1) Where applicable, a fellow's Scholarship Oversight Committee should be a collaborative effort involving other pediatric subspecialty programs or other experts.
  - IV.D.1.c) Each fellow must design and conduct a scholarly project in pediatric nephrology with guidance from the fellowship director and a designated mentor. The designated mentor must:
    - IV.D.1.c).(1) be approved by the Scholarship Oversight Committee; and,
    - IV.D.1.c).(2) have expertise in the fellow's area of scholarly interest, either as a faculty member in pediatric nephrology or through collaboration with other departments or divisions.
  - IV.D.1.d) Fellows' scholarly experience must begin in the first year and continue for the entire length of the educational program.
    - IV.D.1.d).(1) The experience must be structured to allow development of requisite skills in research and scholarship, and provide sufficient time for project completion, and presentation of results to the Scholarship Oversight Committee.

IV.D.2. Faculty Scholarly Activity

IV.D.2.a) The program director must demonstrate a record of ongoing involvement in scholarly activity.

**V. Evaluation**

See International Foundational Requirements, Section V.

**VI. The Learning and Working Environment**

**VI.A. Principles**

See International Foundational Requirements, Section VI.A.

**VI.B. Patient Safety**

See International Foundational Requirements, Section VI.B.

**VI.C. Quality Improvement**

See International Foundational Requirements, Section VI.C.

**VI.D. Supervision and Accountability**

VI.D.1. The program must ensure supervision of fellows through explicit written descriptions of supervisory lines of responsibility for patient care.

VI.D.1.a) Supervision guidelines must be communicated to all members of the program staff.

VI.D.1.b) Fellows must be provided with prompt, reliable systems for communication and interaction with supervisory physicians.

**VI.E. Professionalism**

See International Foundational Requirements, Section VI.E.

**VI.F. Well-Being**

See International Foundational Requirements, Section VI.F.

**VI.G. Fatigue**

See International Foundational Requirements, Section VI.G.

**VI.H. Transitions of Care**

See International Foundational Requirements, Section VI.H.

**VI.I. Clinical Experience and Education**

See International Foundational Requirements, Section VI.I.

**VI.J. On-Call Activities**

See International Foundational Requirements, Section VI.J.