



ACGME International

Advanced Specialty Program Requirements for Graduate Medical Education in Pediatric Endocrinology (Pediatrics)

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I. Introduction

I.A. Definition and Scope of Specialty

Specialists in pediatric endocrinology diagnose and manage endocrine diseases and understand the physiology of hormonal regulation in infancy, childhood, adolescence, and young adulthood. Pediatric endocrinology programs provide fellows with the necessary cognitive and technical skills to prepare them to serve as skilled clinicians, competent educators, and scholars who contribute to scientific advances in the field.

I.B. Duration of Education

I.B.1. The educational program in pediatric endocrinology must be 36 or 48 months in length.

II. Institutions

II.A. Sponsoring Institution

II.A.1. A fellowship in pediatric endocrinology must function as an integral part of an ACGME-I-accredited residency program in pediatrics.

II.A.1.a) The pediatric endocrinology fellowship program should be geographically proximate to the core pediatrics residency program.

II.A.2. The educational program in pediatric endocrinology must not negatively affect the education of residents in the affiliated pediatrics residency program.

II.B. Participating Sites

See International Subspecialty Foundational Requirements, Section I.B.

III. Program Personnel and Resources

III.A. Program Director

III.A.1. The program director must demonstrate a record of ongoing involvement in scholarly activity.

III.A.2. 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.

III.A.3. The program director must ensure that each fellow:

III.A.3.a) is provided with mentorship in development of the necessary clinical, educational, scholarship, and administrative skills; and,

- III.A.3.b) documents experience in procedures.
- III.A.3.b).(1) The program director must ensure that such documentation is available for review.
- III.A.4. The program director must coordinate with the core residency and other related subspecialty program directors on the incorporation of the Competencies into fellowship education to foster consistent expectations for fellows' achievement and faculty members' evaluation processes.
- III.A.5. Meetings with the program directors of the core residency program and all pediatric subspecialties should take place at least semiannually.
- III.A.5.a) There must be documentation of the meetings.
- III.A.5.b) The meetings should address a departmental approach to common educational issues and concerns that may include core curriculum, the Competencies, and evaluation.
- III.A.6. The program director must have the authority and responsibility to set and adjust fellows' clinical responsibilities and ensure that fellows have appropriate clinical responsibilities and an appropriate patient load.
- III.B. Faculty**
- III.B.1. To ensure the quality of the educational and scholarly activity of the program, and to provide adequate supervision of fellows, there must be at least two faculty members, including the program director.
- III.B.2. Faculty members must encourage and support fellows in scholarly activities.
- III.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.
- III.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 pediatric endocrinology.
- III.B.3. Qualified faculty members in the following pediatric subspecialties should be available for the education of fellows:
 - III.B.3.a) adolescent medicine;
 - III.B.3.b) neonatal-perinatal medicine;
 - III.B.3.c) pediatric critical care medicine;
 - III.B.3.d) pediatric emergency medicine;
 - III.B.3.e) pediatric gastroenterology; and,

- III.B.3.f) pediatric hematology-oncology.
- III.B.4. The faculty should also include the following specialists with substantial experience in treating pediatric problems:
 - III.B.4.a) anesthesiologist(s);
 - III.B.4.b) child and adolescent psychiatrist(s);
 - III.B.4.c) child neurologist(s);
 - III.B.4.d) medical geneticist(s);
 - III.B.4.e) neurological surgeon(s);
 - III.B.4.f) neuroradiologist(s);
 - III.B.4.g) nuclear medicine physician(s);
 - III.B.4.h) obstetrician(s) and gynecologist(s);
 - III.B.4.i) ophthalmologist(s);
 - III.B.4.j) pathologist(s);
 - III.B.4.k) pediatric surgeon(s);
 - III.B.4.l) interventional radiologist(s); and,
 - III.B.4.m) urologist(s).
- III.B.5. Consultants should be available in adult endocrinology for transition care of young adults.

III.C. Other Program Personnel

- III.C.1. To ensure multidisciplinary and interprofessional practice in pediatric endocrinology, the following personnel with pediatric focus and experience should be available:
 - III.C.1.a) child life therapist(s);
 - III.C.1.b) diabetes educator(s);
 - III.C.1.c) dietitian(s);
 - III.C.1.d) mental health professional(s)
 - III.C.1.e) nurse(s);
 - III.C.1.f) pharmacist(s);
 - III.C.1.g) school and special education liaison(s); and,

III.C.1.h) social worker(s).

III.D. Resources

III.D.1. Facilities and services, including comprehensive laboratory, pathology, and imaging, must be available.

III.D.2. The program must have access to laboratories in order to perform testing specific to pediatric endocrinology.

III.D.3. An adequate number and variety of pediatric endocrinology patients ranging in age from newborn through young adulthood must be available to provide a broad experience for fellows.

III.D.3.a) A sufficient number of patients must be available in inpatient and outpatient settings to meet the educational needs of the program.

IV. Fellow Appointments

IV.A. Eligibility Criteria

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

IV.B. Number of Fellows

See International Subspecialty Foundational Requirements, Section IV.B.

V. Specialty-Specific Educational Program

V.A. Regularly Scheduled Didactic Sessions

V.A.1. Fellows must have a formally structured educational program in the clinical and basic sciences related to pediatric endocrinology.

V.A.1.a) The program must utilize didactic experiences, such as lectures, seminars, case discussions, journal clubs, and clinical experience.

V.A.1.b) Pediatric endocrinology conferences must occur regularly, and must involve active participation by the fellows in planning and implementation.

V.A.1.c) Fellow education must include instruction in:

V.A.1.c).(1) basic and fundamental disciplines, as appropriate to pediatric endocrinology, such as anatomy, physiology, biochemistry, embryology, pathology, microbiology, pharmacology, immunology, genetics, and nutrition/metabolism;

- V.A.1.c).(2) pathophysiology of disease, reviews of recent advances in clinical medicine and biomedical research, and conferences dealing with bioethics, complications and death, and the scientific, ethical, and legal implications of confidentiality and informed consent; and,
- V.A.1.c).(2).(a) This should include relationships between physicians and with patients, families, allied health professionals, and society at large.
- V.A.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.

V.B. Clinical Experience

- V.B.1. Fellows must manage a pediatric endocrinology patient population that is diverse in terms of diagnoses and complexity in both inpatient and outpatient settings.
- V.B.2. Fellows must have clinical experiences that provide sufficient opportunity to learn about normal and abnormal hormonal regulation.
- V.B.3. Clinical experiences must address the interaction of endocrine pathology and psychosocial problems.
- V.B.4. Fellows must have longitudinal responsibility for providing care to a panel of patients throughout their educational program that is supervised by one or more members of the pediatric endocrinology faculty.
- V.B.4.a) This must include longitudinal care of outpatients.
- V.B.4.b) The panel of patients must be representative of the types of endocrinology disorders fellows are likely to encounter once they complete the program.
- V.B.5. Fellow education must include experience serving as a role model and providing supervision to residents and/or medical students.

V.C. Fellows' Scholarly Activities

- V.C.1. The program must have a core curriculum in research and scholarship.
- V.C.1.a) Where appropriate, the curriculum should be a collaborative effort involving all pediatric subspecialty programs at the institution.
- V.C.2. Each fellow must design and conduct a scholarly project in the area of pediatric endocrinology with guidance from the fellowship director and a designated mentor. The designated mentor must:
- V.C.2.a) be approved by the scholarship oversight committee; and,

- V.C.2.b) have expertise in the fellow's area of scholarly interest, either as a faculty member in pediatric endocrinology or through collaboration with other departments or divisions.
- V.C.3. The program must provide a scholarship oversight committee for each fellow to oversee and evaluate his or her progress as related to scholarly activity.
 - V.C.3.a) Where applicable, the fellow scholarship oversight committee should be a collaborative effort involving other pediatric subspecialty programs or other experts.
- V.C.4. Fellows' scholarly experience must begin in the first year and continue for the entire length of the educational program.
 - V.C.4.a) 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.

V.D. Duty Hour and Work Limitations

See International Subspecialty Foundational Requirements, Sections VI.I. and VI.J.

VI. ACGME-I Competencies

VI.A. Patient Care

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows must demonstrate proficiency in:

- VI.A.1. the clinical skills needed in pediatric endocrinology, including:
 - VI.A.1.a) 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;
 - VI.A.1.b) providing transfer of care that ensures seamless transitions;
 - VI.A.1.c) providing for or coordinating care for patients with complex and chronic diseases with the appropriate physician/and/or agency; and,
 - VI.A.1.d) promoting emotional resilience in children, adolescents, and their families through:
 - VI.A.1.d).(1) providing care that is sensitive to the developmental stage of the patient with common behavioral and mental health issues, and the cultural context of the patient and family; and,

- VI.A.1.d).(2) demonstrating the ability to refer and/or co-manage patients with common behavioral and mental health issues along with appropriate specialists when indicated.
- VI.A.2. Fellows must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the practice of pediatric endocrinology.
- VI.A.2.a) Fellows must competently use and interpret the results of laboratory tests, imaging, and other diagnostic procedures.
- VI.A.3. Fellows must demonstrate competence in the acute care of patients with endocrine disorders in the ambulatory, emergency, and inpatient settings, including such care of patients with endocrine emergencies.
- VI.A.4. Fellows must demonstrate competence in the longitudinal care, monitoring, care coordination, and facilitation of the transition to adult health care of patients with chronic endocrine disorders including diabetes mellitus, in the ambulatory and inpatient settings.
- VI.A.5. Fellows must demonstrate competence in the care of patients with:
- VI.A.5.a) disorders of growth;
 - VI.A.5.b) disorders of anterior pituitary hormone physiology;
 - VI.A.5.c) disorders of posterior pituitary hormone physiology;
 - VI.A.5.d) disorders of thyroid hormone physiology;
 - VI.A.5.e) disorders of adrenal gland physiology;
 - VI.A.5.f) disorders of androgen and estrogen physiology, including adolescent reproductive endocrinology;
 - VI.A.5.g) disorders of sexual differentiation and development, including patients with gender dysphoria;
 - VI.A.5.h) disorders of parathyroid gland physiology;
 - VI.A.5.i) disorders of calcium, phosphorus, and Vitamin D;
 - VI.A.5.j) disorders of bone physiology;
 - VI.A.5.k) disorders of fluid and electrolyte balance;
 - VI.A.5.l) disorders of carbohydrate metabolism, including diabetes mellitus and hypoglycemia;
 - VI.A.5.m) disorders of nutrition;
 - VI.A.5.n) endocrine neoplasia; and,
 - VI.A.5.o) obesity, including obesity-related endocrine disorders.

VI.B. Medical Knowledge

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:

- VI.B.1. biostatistics, 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; and,
- VI.B.2. the principles of laboratory techniques, including the measurements of hormones.
 - VI.B.2.a) Fellows must be able to recognize the limitations of interpretation of laboratory results.
 - VI.B.2.b) Fellows must be able to interpret endocrine laboratory results, to include stimulation and suppression tests.
 - VI.B.2.c) Fellows must be able to choose the most appropriate imaging modality for a given endocrine disorder.

VI.C. Practice-based Learning and Improvement

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.

VI.D. Interpersonal and Communication Skills

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

- VI.D.1. Fellows must demonstrate leadership skills to enhance team function, the learning environment, and/or health care delivery system/environment with the ultimate intent of improving care of patients.

VI.E. Professionalism

Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

VI.F. Systems-based Practice

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care in the country or region in which they practice, as well as the ability to call effectively on other resources in the system to provide optimal health care.