

NIH Pediatric Endocrinology Training Program Fellowship Program Program on Developmental Endocrinology & Genetics, NICHD, NIH

Curriculum and evaluation methods

The following document represents a defined educational program or curriculum which has been established as a guide for trainees in Pediatric Endocrinology. It addresses the six competency areas: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. It is developed with the goal of instilling the capacity for and interest in life-long learning, and is in accordance with the Program Requirements on Pediatric Endocrinology approved by ACGME in 2008 (see attached). It is also adapted to the specific needs educational goals, objectives and resources of the NIH.

Part I: Summary of Principle Learning Goals, and Objectives and Education Methodology of the Program by Relevant ACGME Competency Domain

1. Patient Care

Principle Educational Goals

A. Technical Skills

The Fellow will master the technical skills relevant for the practice of pediatric endocrinology. These skills include, as a minimum, the following: detailed physical assessment and analysis of patients and their laboratory data, interpretation of special physical features, interpretation of molecular and other diagnostic tests, appropriate counseling for both individuals and families, performance of certain procedures, extraction of relevant clinical information from a patient's medical record.

B. Clinical Consultation

The Fellow will learn to provide appropriate and effective and timely consultation to clinicians and other health care providers. Consultation will, as a minimum, include providing a diagnosis, discussing the implications of a diagnosis in the management of a patient, providing advice regarding ordering of additional diagnostic tests, assisting in the interpretation of results, or offering counseling strategies for family members.

Learning Activities

Direct Patient Care, Attending Rounds

Evaluation Methods

Attending Evaluation, Direct Observation of technical skills, writing skills and communication skills:

The Program Director will meet monthly with the rotation site director to review fellows' performance in an ongoing fashion. Information from these meetings is incorporated into the feedback residents receive at their regular meetings with the Program Director.

2. Medical Knowledge

Principle Educational Goals

A. Fund of Medical Knowledge

The Fellow will develop a fund of general medical knowledge and focused endocrine knowledge relevant to the competent practice of pediatric endocrinology. This fund of knowledge will include, but not be limited to, an understanding of basic concepts of endocrine disease; the pathophysiology of the endocrine system, the epidemiologic, clinical, morphologic, biochemical and/or genetic features of endocrine disorders, and the social impact of certain endocrine diseases (for example pediatric obesity). Fellows are expected to read the current literature relevant to each patient.

B. Application of Medical Knowledge in the Practice of Pediatric Endocrinology

The Fellow will learn to effectively apply his/her general and focused medical knowledge in the day-to-day practice of Pediatric Endocrinology. The Fellow must be able to apply his/her knowledge of the diagnostic, prognostics and general therapeutic features of both common and rare disorders to analyze clinical situations, construct a reasonable differential diagnosis, establish a definite diagnosis, and discuss the prognostic and general therapeutic implications of a disorder with clinicians and patients.

Learning Activities

Direct Patient Care, Clinical Conferences, Courses, Case presentations

Evaluation Methods

Attending Evaluation, Direct Observation, and Evaluation of Formal Presentations by Program Director and Fellowship Committee members present during presentation.

3. Practice-Based Learning and Improvement

Principle Educational Goals

A. Evidence-Based Practice

The Fellow will learn to make effective use of conferences, lectures and reading of the medical literature (texts, journals, and medical/genetic databases) to inform his/her day-to-day practice of Pediatric Endocrinology, and in the development and resolution of a differential diagnosis.

The Fellow must develop the ability to critically evaluate the quality of research studies and to be discriminating in the selection of information sources used to support medical decision making.

B. Use of Information Technology

The Fellow will learn to use a variety of information technologies to inform and improve his/her day-to-day practice of Pediatric Endocrinology. Examples of information technologies that must be mastered include electronic medical literature databases, internet-based information sources such as computer based resources (CD's and other media) and the PubMed and other search engines (OMIM etc.)

Learning Activities

Direct Patient Care, Ethics Conference, Clinical Case Conference

Evaluation Methods

Attending Evaluation, Direct Observation

4. Interpersonal and Communication Skills

Principle Educational Goals

A. Communication Skills

The Fellow will learn to communicate effectively and appropriately with health care providers, laboratory and staff members, administrators, patients and other individuals in the course of his/her practice. These communications will include verbal (face-to-face and telephone conversations) and written (written reports, letters, email messages etc.) formats. The Fellow must strive to communicate in a clear, concise, accurate and focused manner. The Fellow must develop and practice skill in counseling patients and their families regarding their disease. The Fellow must be able to communicate on both an emotional and informational level when caring for patients facing a crisis. Regarding the production of written reports, the ultimate goal is for the Fellow to produce, essentially, letter-perfect reports that require minimal or no modification by the attending and that convey essential diagnostic information in a clear, understandable manner.

B. Teamwork

The resident will learn to work as an effective member of the health care team in the course of his/her daily practice. The resident must strive to perform his/her tasks in a responsible and timely fashion, facilitate the tasks of other team members and be cooperative in his/her interactions with team members. Team members may include other residents, attending geneticists, consultants, clinicians, administrators, technicians and others.

Learning Activities

Direct Patient Care, Multidisciplinary/QA rounds, written reports and letters

Evaluation Methods

Attending Evaluation, Direct Observation, and 360-degree evaluation during NIH Outpatient Clinic/Consult Service and In-Patient rotations by nurses and nurse practitioners.

5. Professionalism

Principle Educational Goals

A. Courtesy and Collegiality

The Fellow must learn to treat health care providers (including clinicians, nurses, counselors, other endocrinologists etc.), administrators, patients and others courteously and respectfully. The Fellow must learn to be collegial in all interactions with other members of the health care team.

B. Professional Responsibility

The Fellow must learn to take his/her professional responsibilities seriously and act accordingly. The latter may include clinical service (including on-call responsibilities), teaching, administrative tasks, research, institutional tasks, and work with professional organizations. The Fellow should strive to approach each of these responsibilities with enthusiasm and complete all tasks and assignments effectively and in a timely fashion.

Learning Activities

Direct Patient Care, Attending Rounds

Evaluation Methods

Attending Evaluation, direct observation

6. Systems-Based Practice

Principle Educational Goals

A. The Health Care System and the Role of Pediatric Endocrinology

The Fellow must acquire knowledge of practice and health care delivery systems and an awareness of the role of pediatric endocrinologists in the context of the greater health care system. The Fellow will develop a working knowledge of different inpatient and outpatient healthcare delivery systems and the general regulatory and financial aspects of healthcare delivery. The Fellow must learn the importance of providing effective and timely consultation to clinicians, advising healthcare providers in the provision of cost-effective care, while cognizant and in accord with patient privacy and confidentiality. The Fellow should learn to provide statistical and other relevant data, as needed, in support of quality care, and the Institution.

B. General Laboratory Administration

The Fellow will develop an understanding of the general administrative aspects of Pediatric Endocrinology Practice and will learn to understand and apply the principles of quality control, quality assurance, and continuous quality improvement. The Fellow will develop a working knowledge of laboratory skills, report generation, and safe genetic diagnostic laboratory practice.

Learning Activities

Direct Patient Care

Evaluation Methods

Attending Evaluation, Direct Observation

At the conclusion of the program, the graduating Fellow in Pediatric Endocrinology should:

1. Have developed an understanding of basic Pediatric Endocrine disease processes
2. Have acquired skills needed to interpret laboratory data and make correlations facilitating clinical diagnoses
3. Be able to communicate effectively with peers in Pediatric Endocrinology, clinical colleagues, patients and their families
4. Have developed investigational skills to better understand Pediatric Endocrine processes as they apply to both individual patients and the general patient population
5. Have acquired knowledge of the tools needed to generate laboratory diagnoses
6. Have demonstrated the potential for professional growth, with the ability to pursue life-long learning
7. Have demonstrated competency to function as a subspecialist in Pediatric Endocrinology
8. Have completed and successfully passed all coursework and exams in required didactic courses
9. Have achieved high pass grades in annual training examinations

At the conclusion of the program, the graduating Fellow should have acquired the following skills:

1. Be able to obtain pertinent information from the patient and by critical review of the patient's clinical record
2. Demonstrate knowledge of information that is necessary to provide adequate clinical history on submission forms for diagnostic testing
3. Demonstrate proficiency in disease counseling and risk assessment
4. Describe and appropriately select diagnostic tests for a variety of common and rare endocrine disorders
5. Describe appropriate and effective management and care for a variety of common and rare endocrine disorders

Part II: Specific Competency Based Goals and Objectives by Rotation Assignment and Year/Level of Training

A. Year 1

Summary of Rotation Assignments in Year 1

1. NIH inpatient Pediatric/Adult Endocrinology Service-5 months
2. Pediatric Genetics and Lipid Service-1 month
3. Georgetown University/CNMC rotation -2 months
4. NCC-WRAMC rotation-2 months
5. Johns Hopkins (JHU) rotation-2 months

Summary of Program Expectations/Outcomes for Year 1/Skill Level 1

By the completion of Year1/Skill level 1, -Achieved by the successful 1st year Fellow will:

- *Demonstrate competent physical assessment skills
- *Demonstrate competent pedigree construction skills
- *Demonstrate scholarly written reports and letters
- *Demonstrate compassionate and understandable patient/family management
- *Demonstrate ability to identify and order appropriate and correct laboratory diagnostics
- *Demonstrate ability to accomplish case presentations with appropriate computer equipment
- *Demonstrate ability to interpret research papers and present in journal club
- *Have taken and achieved a passing grade in in-training examination

*Demonstrate sufficient clinical judgment and proficiency to permit care of patients with more complex disorders under supervision of the faculty

Specific Competency Based Goals and Objectives By Rotation Assignment in Year 1

Rotation: NIH wards

The goals and objectives of the rotations in pediatric genetics are:

- a. Gain experience in the diagnosis, management, and counseling of individuals with a variety of mostly rare and/or genetic endocrine disorders
- b. Develop medical history taking skills relevant to children with known or suspected endocrine disorders
- c. Refine clinical assessment skills; analyze biochemical data
- d. Acquire skills in performing physical examination focusing on the endocrine system
- e. Develop knowledge base to enable generation of differential diagnosis
- f. Understand and manage the immediate sequelae of abnormal laboratory results
- g. Recognize and implement care plans for acute metabolic emergencies.
- h. Counsel individuals and families regarding test results, prognosis, and possible therapeutic interventions.
- i. Develop skills in helping people cope with difficult news or bereavement issues.
- j. Participate in interdisciplinary medical teams caring for patients to communicate disease-related issues to families and other care providers.

Competency 1: Patient Care

Provide clinical care in the area of Pediatric Endocrinology to patients/families.

Principal Educational Objectives

Obtain and document medical history including a detailed prenatal and family history

Perform and document thorough physical examination on a child with suspected endocrine disorder; take detailed measurements

Identify, explain and provide initial management and support for a variety of endocrine and/or metabolic conditions (see detailed curriculum):

Learning Activities

Direct patient care, faculty supervision

Direct patient care, faculty supervision

Direct patient care, faculty supervision

Evaluation Methods

Attending Evaluation, Direct Observation, Chart Review

Competency 2: Medical Knowledge

Understand the scope of established and evolving biomedical, clinical, epidemiological and behavioral knowledge needed by a Pediatric Endocrinologist; demonstrate ability to acquire, critically interpret and apply this knowledge in patient care.

Principal Educational Objectives

- Describe findings of common endocrine disorders
- Attend courses; attend clinical conference and rounds.
- Assigned reading
- Describe the evaluation of a patient with a potential metabolic emergency
- Attend clinical conference and rounds, assigned reading
- Explain findings on clinical history and exam that suggest a known or potential disorder

Learning Activities

Direct patient care, rounds, assigned reading

Evaluation Methods

Attending Evaluation, Direct Observation, Chart Review, Course Grade

Competency 3: Interpersonal and Communication Skills

Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

Principal Educational Objectives

- Participate in sessions with patients and families.
- Write letters to patients/families
- Communicate effectively with physicians, other team staff to create and sustain information exchange for patient care; maintain accurate records which are timely

Learning Activities

Direct patient care; faculty supervision;
Direct patient care; faculty supervision

Direct patient care, attend rounds and clinical conferences

Evaluation Methods

Attending Evaluation, Direct Observation

Competency 4: Practice-Based Learning and Improvement

Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

Principal Educational Objectives

Develop strategies to learn about future advances

Identify personal learning needs, systematically organize relevant information resources for future reference and plan for continuing education

Evaluation Methods

Attending Evaluation, Direct Observation

Learning Activities

Journal Club, attend rounds and clinical conferences,

Journal club, attend rounds and clinical conferences

Competency 5: Professionalism

Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity.

Principal Educational Objectives

Discuss the ethical, legal, financial and social issues of diagnosis/testing in children that may present in adulthood, providing medical care for patients with known disorders

Demonstrate a commitment and personal accountability to the well being of all patients, your own and consults, and follow –up on lab results, writing comprehensive notes

Evaluation Methods

Attending Evaluation, Direct Observation

Learning Activities

Direct patient care, journal club, attending rounds and clinical conferences

Attend rounds, clinical conference

Competency 6: Systems-Based Practice

Understand how to practice quality health care and advocate for patients within the context of the health care system.

Principal Educational Objectives

Identify written and internet resources to aid in endocrine diagnoses to supplement physical findings and lab results

Identify other protocols for patients' possible participation and facilitate enrollment, complete informed consent

Recognize and advocate for families who need assistance to deal with burdens of protocol participation or complexities of research system

Learning Activities

Direct patient care, faculty supervision

Direct patient care, faculty supervision

Direct patient care

Evaluation Methods

Attending Evaluation, Direct Observation

Rotation: Genetics & Lipids (NIH)

The goals and objectives of this one month rotation are:

- a. master chart review and history taking with emphasis on the evaluation of patients with suspected hereditary conditions, with both pediatric and adult presentations.
- b. draw and analyze complex pedigrees
- c. perform a physical exam with specific emphasis on identifying the physical features that elucidate dysmorphic syndromes or metabolic disorders
- d. learn to counsel families and patients appropriately about the prognosis and recurrence risks associated with genetic disorders relevant to their cases
- e. order and interpret radiology and laboratory studies appropriately in the diagnosis and management of patients with genetic conditions

Competency 1: Patient Care

Provide clinical care in the area of medical genetics to patients/families who are either affected or potentially affected by a condition, which has a genetic component.

Principal Educational Objectives

Obtain and document a detailed medical/family and prenatal history
supervision, attend rounds and clinical conferences
Perform and document a thorough physical exam that includes
measurements to determine normal vs abnormal and major/minor
dysmorphic features on adults and children

Develop a management plan within the protocol for the disorder;
identify conditions requiring urgent attention (metabolic conditions)

Identify resources for diagnosis, counseling and support of
patients/families

Learning Activities

Direct patient care, faculty

Direct patient care, faculty
supervision,
attend rounds and clinical
conferences

Direct patient care, faculty
supervision, attend rounds and
clinical conferences

Attend rounds and clinical c
conferences

Evaluation Methods

Attending Evaluation, Direct Observation, Chart Review

Competency 2: Medical Knowledge

Understand the scope of established and evolving biomedical, clinical, epidemiological, and social-behavioral knowledge needed by a Medical Geneticist; demonstrate ability to acquire, critically interpret and apply this knowledge in patient care.

Principal Educational Objectives

Describe findings of genetic abnormalities and
common single gene disorders
Describe common patterns of Mendelian vs
non-Mendelian inheritance (autosomal,
dominant, recessive, x-linked), ability to construct
a three generation pedigree

Learning Activities

Clinical conferences, patient care

Clinical conference, patient care

Evaluation Methods

Attending Evaluation, Direct Observation, Course Grade

Competency 3: Interpersonal and Communications Skills

Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates

Principal Educational Objective

Learning Activities

Participate in genetic counseling sessions

Direct patient care, attend rounds and clinical conferences, faculty supervision

Discuss sensitive issues that relate to the genetic condition

Direct patient care, faculty supervision

Write counseling letters to pts/families after counseling; maintain accurate, legible, timely and legally appropriate medical records

Direct patient care, faculty supervision

Evaluation Methods

Attending Evaluation, Direct Observation

Competency 4: Practice-Based Learning and Improvement

Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one’s patient care practice.

Principal Educational Objectives

Learning Activities

Develop strategies to learn about future advances

Assigned reading, clinical conference, journal club

Identify personal learning needs, organize relevant references for future study, and plan for continuing data acquisition

Journal club, clinical conference, assigned reading

Evaluation Methods

Attending Evaluation, Direct Observation

Competency 5: Professionalism

Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity

Principal Educational Objectives

Demonstrate personal accountability for the well being of all pts, by following up on labs, consults, writing comprehensive notes and answering difficult patient care questions

Demonstrate a commitment to carrying out professional responsibilities, adhering to ethical and legal principles, adherence to protocol requirements, with sensitivity to diversity

Learning Activities

Direct patient care, attending rounds and clinical conferences

Direct patient care, attending rounds and clinical conferences

Evaluation Methods

Attending Evaluation, Direct Observation

Competency 6: Systems-Based Practice

Understand how to practice quality health care and advocate for patients within the context of the health care system.

Principal Educational Objectives

Identify written, and computer resources to aid in genetic diagnoses to use with physical and laboratory findings

Obtain informed consent for participation in research protocol and recognize and advocate for patients/families who need assistance to deal with system complexities

Learning Activities

Direct patient care, faculty supervision

Direct patient care

Evaluation Methods

Attending Evaluation, Direct Observation, Course Grade

Rotation: GUH/CNMC

The goals and objectives of the rotation (duration: 2 months) are:

- a. Obtain experience in common pediatric endocrine disease and routine physical examination
- b. Develop an accurate differential diagnosis and plan a diagnostic work-up
- c. Learn laboratory assessment skills for individuals with common endocrine disorders and become familiar with their treatment

Competency 1: Patient Care

Provide clinical care to patients/families who are either affected or potentially affected by a pediatric endocrine condition.

Principal Educational Objectives

Obtain and document medical history including a detailed prenatal and family history

Perform and document thorough physical examination on a child with suspected endocrine disorder,

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, faculty supervision

Direct patient care, faculty supervision

Competency 2: Medical Knowledge

Understand the scope of established and evolving biomedical and clinical knowledge needed by a Pediatric Endocrinologist; demonstrate ability to acquire, critically interpret and apply this knowledge in patient care.

Principal Educational Objectives

Describe findings of endocrine disorders

Describe the evaluation of a patient with a potential endocrine emergency

Explain findings on clinical history and examination that suggest a known or potential endocrine disorder

Evaluation Methods

Attending Evaluation, direct observation, course grade

Learning Activities

Attend clinical conference and rounds.
Reading

Attend clinical conference and rounds,
Reading

Direct patient care, rounds, reading

Competency 3: Interpersonal and Communication Skills

Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

Principal Educational Objectives

Participate in genetic counseling sessions for endocrine disorders

Write letters to patients/families after counseling session which discuss sensitive issues related to the condition

Communicate effectively with physicians, other staff to create and sustain information exchange for patient care; maintain accurate records which are timely

Learning Activities

Direct patient care; faculty supervision

Direct patient care; faculty supervision

Direct patient care, attend rounds and clinical conferences

Evaluation Methods

Attending Evaluation, direct observation

Competency 4: Practice-Based Learning and Improvement

Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

Principal Educational Objectives

Develop strategies to learn about future advances in the understanding of endocrine disorders in order to incorporate into one's practice improved screening, identification, counseling and management of these disorders

Identify personal learning needs, systematically organize relevant information resources for future reference and plan for continuing education conferences

Learning Activities

Journal Club, attend rounds and clinical conferences, QA meeting

Journal club, attend rounds and clinical

Evaluation Methods

Attending Evaluation, direct observation

Competency 5: Professionalism

Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity.

Principal Educational Objectives

Discuss the ethical, legal, financial and social issues of endocrine diseases in children, testing children, and providing medical care for patients with known chronic disorders

Demonstrate a commitment and personal accountability to the well being of all patients, your own and consults, and follow –up on lab results, writing comprehensive notes

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, journal club, attending rounds and clinical conferences

Attend rounds and clinical conferences

Competency 6: Systems-Based Practice

Understand how to practice quality health care and advocate for patients within the context of the health care system.

Principal Educational Objectives

Identify written and internet resources to aid in genetic or endocrine diagnoses to supplement physical findings and lab results

Recognize and advocate for patients who need assistance to deal with burdens of disease and care

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, faculty supervision

Direct patient care

Rotation: NCC/WRAMC

The goals and objectives of this two-month rotation in a large military referral center are:

- a. Obtain experience in common pediatric endocrine disease and routine physical examination
- b. Develop an accurate differential diagnosis and plan a diagnostic work-up in a military setting and with an internationally based population of patients.
- c. Learn laboratory assessment skills for individuals with common endocrine disorders and become familiar with their treatment

Competency 1: Patient Care

Provide clinical care to patients/families who are either affected or potentially affected by a pediatric endocrine condition.

Principal Educational Objectives

Obtain and document medical history including a detailed prenatal and family history

Perform and document thorough physical examination on a child with suspected endocrine disorder,

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, faculty supervision

Direct patient care, faculty supervision

Competency 2: Medical Knowledge

Understand the scope of established and evolving biomedical and clinical knowledge needed by a Pediatric Endocrinologist; demonstrate ability to acquire, critically interpret and apply this knowledge in patient care.

Principal Educational Objectives

Describe findings of endocrine disorders

Describe the evaluation of a patient with a potential endocrine emergency

Explain findings on clinical history and examination that suggest a known or potential endocrine disorder

Evaluation Methods

Attending Evaluation, direct observation, course grade

Learning Activities

Attend clinical conference and rounds.
Reading

Attend clinical conference and rounds,
Reading

Direct patient care, rounds, reading

Competency 3: Interpersonal and Communication Skills

Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

Principal Educational Objectives

Participate in genetic counseling sessions for endocrine disorders

Write letters to patients/families after counseling session which discuss sensitive issues related to the condition

Communicate effectively with physicians, other staff to create and sustain information exchange for patient care; maintain accurate records which are timely

Learning Activities

Direct patient care; faculty supervision

Direct patient care; faculty supervision

Direct patient care, attend rounds and clinical conferences

Evaluation Methods

Attending Evaluation, direct observation

Competency 4: Practice-Based Learning and Improvement

Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

Principal Educational Objectives

Develop strategies to learn about future advances in the understanding of endocrine disorders in order to incorporate into one's practice improved screening, identification, counseling and management of these disorders

Identify personal learning needs, systematically organize relevant information resources for future reference and plan for continuing education conferences

Learning Activities

Journal Club, attend rounds and clinical conferences, QA meeting

Journal club, attend rounds and clinical

Evaluation Methods

Attending Evaluation, direct observation

Competency 5: Professionalism

Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity.

Principal Educational Objectives

Discuss the ethical, legal, financial and social issues of endocrine diseases in children, testing children, and providing medical care for patients with known chronic disorders

Demonstrate a commitment and personal accountability to the well being of all patients, your own and consults, and follow –up on lab results, writing comprehensive notes

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, journal club, attending rounds and clinical conferences

Attend rounds and clinical conferences

Competency 6: Systems-Based Practice

Understand how to practice quality health care and advocate for patients within the context of the health care system.

Principal Educational Objectives

Identify written and internet resources to aid in genetic or endocrine diagnoses to supplement physical findings and lab results

Recognize and advocate for patients who need assistance to deal with burdens of disease and care

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, faculty supervision

Direct patient care

Rotation: JHU

The goals and objectives of this two-month rotation in a large academic but general hospital center are:

- a. Obtain experience in common pediatric endocrine disease and routine physical examination
- b. Develop an accurate differential diagnosis and plan a diagnostic work-up in an urban setting and with a highly diverse population of patients.
- c. Learn laboratory assessment skills for individuals with common endocrine disorders and become familiar with their treatment

Competency 1: Patient Care

Provide clinical care to patients/families who are either affected or potentially affected by a pediatric endocrine condition.

Principal Educational Objectives

Obtain and document medical history including a detailed prenatal and family history

Perform and document thorough physical examination on a child with suspected endocrine disorder,

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, faculty supervision

Direct patient care, faculty supervision

Competency 2: Medical Knowledge

Understand the scope of established and evolving biomedical and clinical knowledge needed by a Pediatric Endocrinologist; demonstrate ability to acquire, critically interpret and apply this knowledge in patient care.

Principal Educational Objectives

Describe findings of endocrine disorders

Describe the evaluation of a patient with a potential endocrine emergency

Explain findings on clinical history and examination that suggest a known or potential endocrine disorder

Evaluation Methods

Attending Evaluation, direct observation, course grade

Learning Activities

Attend clinical conference and rounds.
Reading

Attend clinical conference and rounds,
Reading

Direct patient care, rounds, reading

Competency 3: Interpersonal and Communication Skills

Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

Principal Educational Objectives

Participate in genetic counseling sessions for endocrine disorders

Write letters to patients/families after counseling session which discuss sensitive issues related to the condition

Communicate effectively with physicians, other staff to create and sustain information exchange for patient care; maintain accurate records which are timely

Learning Activities

Direct patient care; faculty supervision

Direct patient care; faculty supervision

Direct patient care, attend rounds and clinical conferences

Evaluation Methods

Attending Evaluation, direct observation

Competency 4: Practice-Based Learning and Improvement

Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

Principal Educational Objectives

Develop strategies to learn about future advances in the understanding of endocrine disorders in order to incorporate into one's practice improved screening, identification, counseling and management of these disorders

Identify personal learning needs, systematically organize relevant information resources for future reference and plan for continuing education conferences

Learning Activities

Journal Club, attend rounds and clinical conferences, QA meeting

Journal club, attend rounds and clinical

Evaluation Methods

Attending Evaluation, direct observation

Competency 5: Professionalism

Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity.

Principal Educational Objectives

Discuss the ethical, legal, financial and social issues of endocrine diseases in children, testing children, and providing medical care for patients with known chronic disorders

Demonstrate a commitment and personal accountability to the well being of all patients, your own and consults, and follow –up on lab results, writing comprehensive notes

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, journal club, attending rounds and clinical conferences

Attend rounds and clinical conferences

Competency 6: Systems-Based Practice

Understand how to practice quality health care and advocate for patients within the context of the health care system.

Principal Educational Objectives

Identify written and internet resources to aid in genetic or endocrine diagnoses to supplement physical findings and lab results

Recognize and advocate for patients who need assistance to deal with burdens of disease and care

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, faculty supervision

Direct patient care

B. Year 2

Summary of Rotation Assignments in Year 2

1. Laboratory-all months
2. Clinical Consult service-3 months
3. Outpatient service (continuity clinic)-all months

Summary of Program: Expectations Outcomes for Year 2

By the completion of Year 2, the successful 2nd year Fellow will:

- *Demonstrate knowledge of laboratory methods
- *Demonstrate knowledge of molecular/biochemical tests used for common and rare disorder diagnosis and screening
- *Demonstrate proficiency in physical examination and testing interpretation
- *Demonstrate ability to take care of a patient effectively and independently
- *Demonstrate knowledge of common and rare disorders and methods of diagnosis
- *Take and pass the General Pediatrics Boards Examination
- *Take and achieve a passing grade in the in-training examinations
- * Take and achieve a passing grade in the Principles and Practice of Clinical Research course offered by the NIH Clinical Center
- *Begin a clinical or bench research project
- * Take grant-writing classes and participate in other recommended (by the PD and faculty) educational activities

Principle Educational Goals by Relevant Competency Outcomes Expected of Year 2 by Rotation Assignment

Laboratory

- *familiarity with fundamentals of molecular biology
- *demonstrate knowledge of the range of methods routinely used for clinical diagnosis
- *ability to search the scientific literature to critically assess the development of new tests
- *observe and perform tests in clinical or molecular endocrinology, including PCR and Southern blot analysis
- *ability to communicate with requesting physicians and counsel them on the appropriate use of molecular and/or other related diagnostic testing
- *demonstrate ability to review and interpret molecular results
- *demonstrate understanding of issues of quality control, quality assurance, cost-effectiveness, and laboratory management
- *Learn techniques to prepare samples (blood, urine).
- *Learn to isolate DNA.
- *Learn proper handling of patient samples in a CLIA certified laboratory.
- *Learn how to design and interpret experiments
- *Obtain good knowledge of statistics and its application in interpreting laboratory data

1. Patient Care

Principle Educational Goals

- Appropriately evaluate and manage samples for diagnostic testing or analysis.
- Learn to use the results of testing or analysis to improve patient care by better management and counseling.

Learning Activities

- Observation and role modeling handling and processing samples for testing

Evaluation Methods

- Direct observation, Attending Evaluation, Direct Patient Care

2. Medical Knowledge

Principle Educational Goals

- Gain familiarity with specific techniques for individual conditions and specific assays for analysis.
- Assess and critically evaluate current medical literature and scientific evidence relevant to clinical laboratory medicine in endocrinology

Learning Activities

- Assigned and Independent Reading, Journal Club, Board Review Classes

Evaluation Methods

- Attending Evaluation, Direct Observation

3. Practice-Based Learning and Improvement

Principle Educational Goals

- Identify and acknowledge gaps in knowledge and skills in the genetic diagnostic laboratory

Learning Activities

- Assigned and Independent Reading, Journal Club, QA meetings
- Attend Introduction to Principles and Practice of Clinical Research course

Evaluation Methods

- Attending Evaluation, grade in course

4. Interpersonal Skills and Communication

Principle Educational Goals

- Communicate effectively with patients, families, colleagues, laboratory team members.
- Communicate effectively and accurately in written reports of laboratory results.

Learning Activities

- Conference, written assignments

Evaluation Methods

- Attending Evaluation, review of written assignments

5. Professionalism

Principle Educational Goals

- Behave professionally towards patients, families, colleagues, and all members of the health care team

Learning Activities

- Attendance at rounds; meet with patient and faculty supervisor to review testing result

Evaluation Methods

- Attending Evaluation, 360 degree evaluation

6. Systems-Based Practice

Principle Educational Goals

- Effectively utilize the resources available during each rotation to assure high quality laboratory data
- Use accurate measurements and standards

Learning Activities

- Conferences, other

Evaluation Methods

- Attending evaluation

Outpatient clinic/Consult service

The goals and objectives during the 2nd year are:

- a. Manage common pediatric endocrine disease and routine physical examination
- b. Develop an accurate differential diagnosis and plan a diagnostic work-up.
- c. Learn laboratory assessment skills for individuals with common endocrine disorders and become familiar with their treatment

Competency 1: Patient Care

Provide clinical care to patients/families who are either affected or potentially affected by a pediatric endocrine condition.

Principal Educational Objectives

Obtain and document medical history including a detailed prenatal and family history

Perform and document thorough physical examination on a child with suspected endocrine disorder,

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, faculty supervision

Direct patient care, faculty supervision

Competency 2: Medical Knowledge

Understand the scope of established and evolving biomedical and clinical knowledge needed by a Pediatric Endocrinologist; demonstrate ability to acquire, critically interpret and apply this knowledge in patient care.

Principal Educational Objectives

Describe findings of endocrine disorders

Describe the evaluation of a patient with a potential endocrine emergency

Explain findings on clinical history and examination that suggest a known or potential endocrine disorder

Evaluation Methods

Attending Evaluation, direct observation, course grade

Learning Activities

Attend clinical conference and rounds.
Reading

Attend clinical conference and rounds,
Reading

Direct patient care, rounds, reading

Competency 3: Interpersonal and Communication Skills

Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

Principal Educational Objectives

Participate in genetic counseling sessions for endocrine disorders

Write letters to patients/families after counseling session which discuss sensitive issues related to the condition

Communicate effectively with physicians, other staff to create and sustain information exchange for patient care; maintain accurate records which are timely

Learning Activities

Direct patient care; faculty supervision

Direct patient care; faculty supervision

Direct patient care, attend rounds and clinical conferences

Evaluation Methods

Attending Evaluation, direct observation

Competency 4: Practice-Based Learning and Improvement

Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

Principal Educational Objectives

Develop strategies to learn about future advances in the understanding of endocrine disorders in order to incorporate into one's practice improved screening, identification, counseling and management of these disorders

Identify personal learning needs, systematically organize relevant information resources for future reference and plan for continuing education conferences

Learning Activities

Journal Club, attend rounds and clinical conferences, QA meeting

Journal club, attend rounds and clinical

Evaluation Methods

Attending Evaluation, direct observation

Competency 5: Professionalism

Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity.

Principal Educational Objectives

Discuss the ethical, legal, financial and social issues of endocrine diseases in children, testing children, and providing medical care for patients with known chronic disorders

Demonstrate a commitment and personal accountability to the well being of all patients, your own and consults, and follow –up on lab results, writing comprehensive notes

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, journal club, attending rounds and clinical conferences

Attend rounds and clinical conferences

Competency 6: Systems-Based Practice

Understand how to practice quality health care and advocate for patients within the context of the health care system.

Principal Educational Objectives

Identify written and internet resources to aid in genetic or endocrine diagnoses to supplement physical findings and lab results

Recognize and advocate for patients who need assistance to deal with burdens of disease and care

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, faculty supervision

Direct patient care

C. Year 3

Summary of Rotation Assignments in Year 2

1. Laboratory-all months
2. Clinical Consult service-3 months
3. Outpatient service (continuity clinic)-all months
4. Teaching month (one month)

Summary of Program Expectations Outcomes for Year 3

By the completion of Year 3, the Fellow graduate will:

- *Demonstrate knowledge of laboratory methods
- *Demonstrate knowledge of molecular/biochemical tests used for common and rare disorder diagnosis and screening
- *Demonstrate proficiency in physical examination and testing interpretation
- *Demonstrate ability to take care of a patient effectively and independently
- *Demonstrate knowledge of common and rare disorders and methods of diagnosis
- *Take and achieve a passing grade in the in-training examinations
- * Take and achieve a passing grade in the Principles and Practice of Clinical Research course offered by the NIH Clinical Center
- *Complete a clinical or bench research project
- * Take grant-writing classes and participate in other recommended (by the PD and faculty) educational activities
- *serve for one month as the “teaching attending” in the NIH endocrine wards
- *demonstrating independence in clinical care and academic activities.

Principle Educational Goals by Relevant Competency Outcomes Expected of Year 3 by Rotation Assignment

Laboratory

- *familiarity with fundamentals of molecular biology
- *demonstrate knowledge of the range of methods routinely used for clinical diagnosis
- *ability to search the scientific literature to critically assess the development of new tests
- *observe and perform tests in clinical or molecular endocrinology, including PCR and Southern blot analysis
- *ability to communicate with requesting physicians and counsel them on the appropriate use of molecular and/or other related diagnostic testing
- *demonstrate ability to review and interpret molecular results
- *demonstrate understanding of issues of quality control, quality assurance, cost-effectiveness, and laboratory management
- *Learn techniques to prepare samples (blood, urine).
- *Learn to isolate DNA.
- *Learn proper handling of patient samples in a CLIA certified laboratory.
- *Learn how to design and interpret experiments
- *Obtain good knowledge of statistics and its application in interpreting laboratory data

1. Patient Care

Principle Educational Goals

- Appropriately evaluate and manage samples for diagnostic testing or analysis.
- Learn to use the results of testing or analysis to improve patient care by better management and counseling.

Learning Activities

- Observation and role modeling handling and processing samples for testing

Evaluation Methods

- Direct observation, Attending Evaluation, Direct Patient Care

2. Medical Knowledge

Principle Educational Goals

- Gain familiarity with specific techniques for individual conditions and specific assays for analysis.
- Assess and critically evaluate current medical literature and scientific evidence relevant to clinical laboratory medicine in endocrinology

Learning Activities

- Assigned and Independent Reading, Journal Club, Board Review Classes

Evaluation Methods

- Attending Evaluation, Direct Observation

3. Practice-Based Learning and Improvement

Principle Educational Goals

- Identify and acknowledge gaps in knowledge and skills in the genetic diagnostic laboratory

Learning Activities

- Assigned and Independent Reading, Journal Club, QA meetings
- Attend Introduction to Principles and Practice of Clinical Research course

Evaluation Methods

- Attending Evaluation, grade in course

4. Interpersonal Skills and Communication

Principle Educational Goals

- Communicate effectively with patients, families, colleagues, laboratory team members.
- Communicate effectively and accurately in written reports of laboratory results.

Learning Activities

- Conference, written assignments

Evaluation Methods

- Attending Evaluation, review of written assignments

5. Professionalism

Principle Educational Goals

- Behave professionally towards patients, families, colleagues, and all members of the health care team

Learning Activities

- Attendance at rounds; meet with patient and faculty supervisor to review testing result

Evaluation Methods

- Attending Evaluation, 360 degree evaluation

6. Systems-Based Practice

Principle Educational Goals

- Effectively utilize the resources available during each rotation to assure high quality laboratory data
- Use accurate measurements and standards

Learning Activities

- Conferences, other

Evaluation Methods

- Attending evaluation

Outpatient clinic/Consult service

The goals and objectives during the 2nd year are:

- a. Manage common pediatric endocrine disease and routine physical examination
- b. Develop an accurate differential diagnosis and plan a diagnostic work-up.
- c. Learn laboratory assessment skills for individuals with common endocrine disorders and become familiar with their treatment

Competency 1: Patient Care

Provide clinical care to patients/families who are either affected or potentially affected by a pediatric endocrine condition.

Principal Educational Objectives

Obtain and document medical history including a detailed prenatal and family history

Perform and document thorough physical examination on a child with suspected endocrine disorder,

Evaluation Methods

Attending Evaluation, direct observation

Learning Activities

Direct patient care, faculty supervision

Direct patient care, faculty supervision

Competency 2: Medical Knowledge

Understand the scope of established and evolving biomedical and clinical knowledge needed by a Pediatric Endocrinologist; demonstrate ability to acquire, critically interpret and apply this knowledge in patient care.

Principal Educational Objectives

Describe findings of endocrine disorders

Describe the evaluation of a patient with a potential endocrine emergency

Explain findings on clinical history and examination that suggest a known or potential endocrine disorder

Evaluation Methods

Learning Activities

Attend clinical conference and rounds.
Reading

Attend clinical conference and rounds,
Reading

Direct patient care, rounds, reading

Attending Evaluation, direct observation, course grade

Competency 3: Interpersonal and Communication Skills

Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

Principal Educational Objectives

Participate in genetic counseling sessions for endocrine disorders

Write letters to patients/families after counseling session which discuss sensitive issues related to the condition

Communicate effectively with physicians, other staff to create and sustain information exchange for patient care; maintain accurate records which are timely

Learning Activities

Direct patient care; faculty supervision

Direct patient care; faculty supervision

Direct patient care, attend rounds and clinical conferences

Evaluation Methods

Attending Evaluation, direct observation

Competency 4: Practice-Based Learning and Improvement

Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

Principal Educational Objectives

Develop strategies to learn about future advances in the understanding of endocrine disorders in order to incorporate into one's practice improved screening, identification, counseling and management of these disorders

Identify personal learning needs, systematically organize relevant information resources for future reference and plan for continuing education conferences

Learning Activities

Journal Club, attend rounds and clinical conferences, QA meeting

Journal club, attend rounds and clinical

Evaluation Methods

Attending Evaluation, direct observation

Competency 5: Professionalism

Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity.

Principal Educational Objectives

Discuss the ethical, legal, financial and social issues of endocrine diseases in children, testing children, and providing medical care for patients with known chronic disorders

Demonstrate a commitment and personal accountability to the well being of all patients, your own and consults, and follow –up on lab results, writing comprehensive notes

Learning Activities

Direct patient care, journal club, attending rounds and clinical conferences

Attend rounds and clinical conferences

Evaluation Methods

Attending Evaluation, direct observation

Competency 6: Systems-Based Practice

Understand how to practice quality health care and advocate for patients within the context of the health care system.

Principal Educational Objectives

Identify written and internet resources to aid in genetic or endocrine diagnoses to supplement physical findings and lab results

Recognize and advocate for patients who need assistance to deal with burdens of disease and care

Learning Activities

Direct patient care, faculty supervision

Direct patient care

Evaluation Methods

Attending Evaluation, direct observation