

First year

Clinical Training

Patient Care:

To observe, develop and apply the essentials and necessary skills for good patient care in the outpatient, inpatient and research setting

Goal:

To observe and to develop the essentials to respectfully conduct an interview with the patients and/or their family members or caregivers; proficiency to perform an appropriate history and physical examination; to obtain the tests necessary to recognize and to formulate a treatment plan for the most common endocrine disorders

Objectives:

To develop and demonstrate the ability to:

- Collect pediatric endocrinology-focused medical history and pedigree
- Perform a developmentally and age appropriate physical exam
- Perform a proper examination of the thyroid gland
- Obtain anthropometric measurements including height, weight, head circumference, arm span, and upper and lower segments
- Calculate mid-parental height, and predicted final height based on bone age
- Perform and document appropriate Tanner staging for males and females and to measure testicular volume using the Prader orchidometer
- Identify and describe the signs and symptoms typical of endocrine disease, including skin findings like acanthosis nigricans, café au lait spots, xanthomas, striae, etc.
- To develop the ability to recognize through the signs and symptoms the most common pediatric endocrinology conditions including but not limited to:
 - Normal and abnormal growth

- Growth hormone disorders (including hypothalamic and pituitary disorders)
- Diabetes Insipidus and posterior pituitary disorders
- Delayed and precocious puberty
- Genetic syndromes and disorders with endocrine complications
- Endocrine neoplasia syndromes
- Bone mineral disorders: Calcium, phosphorus, parathyroid regulation, and vitamin D metabolism
- Disorders of carbohydrate metabolism including hypoglycemia, diabetes mellitus and DKA
- Disorders of fluid and electrolyte balance
- Endocrine complications of cancer treatment
- Metabolic syndrome
- Disorders of the thyroid (including hypothalamic and pituitary disorders)
- Disorders of the adrenal (including hypothalamic and pituitary disorders)
- Sexual differentiation and its disorders
- Disorders of nutrition including obesity and eating disorders
- To learn, list, and describe how to obtain and interpret laboratory results
- Perform a detailed endocrine evaluation
 - To generate an appropriate problem list
 - To summarize positive and negative findings
 - To formulate an appropriate differential and definitive diagnosis
 - To demonstrate proficiency in the formulation of a management plan based on the endocrine diagnosis
- To document and summarize history to the attending physician or consultant
- To generate a plan of care including clinic follow -up, laboratory results review and interpretation

Goal:

To learn how to arrange for stimulation tests; to review and describe the rationale, indications and interpretation of pediatric endocrinology diagnostic procedures and stimulation tests

Objectives:

- Know how to interpret results of growth hormone stimulation tests
- To help in the decision of the appropriate growth hormone stimulation test combinations and growth hormone secretagogues
- To interpret LHRH stimulation tests and to calculate the dose of the LHRH analogs
- To define and interpret low and standard dose ACTH stimulation tests based on the suspected diagnosis
- To select and to interpret the glucose tolerance tests
- To perform and to interpret CGMS testing
- To perform and interpret water deprivation test for the diagnosis of Diabetes Insipidus
- To cite indications and the protocol for the fasting studies in the diagnosis of hypoglycemia
- To develop basic skills and understanding in the field of endocrine imaging
- To learn how to order, and to schedule an imaging test, including radiology, magnetic, resonance, nuclear medicine and ultrasonography
- Learn how to order, read and interpret a bone age x-ray

Goal:

Observe and acquire proficiency in the care of pediatric patients with acute or chronic endocrine conditions; to identify and to apply the current recommendations and to counsel parents and families with endocrine conditions

Objectives:

- To learn the evaluation and management including ICU care of the most common endocrine emergencies including:
 - Diabetes Ketoacidosis

- Diabetes Insipidus
- Congenital adrenal hyperplasia
- Hypopituitarism
- Brain tumors with endocrine consequences
- Unstable Graves Disease and thyroid storm
- Serious or life threatening medical conditions
- New presentation of ambiguous genitalia
- To develop a clear understanding of the ethical, financial and legal issues relating to patient care in the hospital setting
- To recognize management priorities and develop a plan of action to achieve goals
- To develop cultural and health disparity sensitivity
- To foster responsibility for patient continuity of care
 - To follow patients from admission to discharge and to provide long-term follow-up in the outpatient clinic
- To develop an appreciation for the complexities of overweight and obesity in our population
 - To identify the interdisciplinary approach to management of overweight and obesity
 - To identify and learn the management of pediatric obesity comorbidities and prognosis
- To increase knowledge of the complex interplay between endocrinology and other subspecialties
- To learn the importance of psychosocial aspects of endocrine disease with emphasis on early intervention
- Foster adherence to principles of medical ethics with focus on endocrine disorders such as ambiguous genitalia
- To learn and develop the skills to educate families and patients about the management of diabetes at home:
 - Educate patients with new onset diabetes in the “Survival Skills” necessary to safely manage diabetes at home
 - Explain the different types of insulin and time of action
 - Demonstrate the proper technique for insulin injection
 - Demonstrate how to use home glucose monitors
 - Learn how to operate the most commonly available insulin pumps and insulin infusion sets

- Develop a basic understanding of the diabetes diet and carbohydrate counting
- Understand and teach the proper techniques for prevention and management of hypoglycemia
- Understand and explain the management for days of illness - “sick day management protocol”

Medical Knowledge:

To broaden the fellow’s knowledge of the basic and clinical science of pediatric endocrinology; to prepare the fellow to become a lifetime learner and teacher; to learn the physiology and pathophysiology of hormone secretion and action; and to correlate with the clinical experience to effectively care for infants, children and adolescents with endocrine disorders.

Goal:

To demonstrate clinical and basic knowledge necessary for patient care and clinical research

Objectives:

- To acquire general endocrine disease knowledge:
 - To learn the physiology, and pathophysiology of the endocrine systems
 - Hypothalamic and anterior pituitary
 - Posterior pituitary
 - Reproductive endocrine system
 - Genetic endocrine disorders and genetic testing for endocrine disorders
 - Bone mineral metabolism
 - Metabolism of carbohydrates
 - Thyroid hormone metabolism and action
 - Adrenal hormones actions and disorders
 - Lipid metabolism
 - Nutrition, obesity and eating disorders
 - Normal and abnormal growth
 - To describe hormone secretion and action

- To illustrate the mechanisms of hormone regulation including hypothalamic-Pituitary axis
- To identify hormone chemical structures
- To describe hormone synthesis including steroidogenesis pathways
- To recognize different hormone receptors
- To describe the basics of signal transduction (receptor and post-receptor hormone actions)
- To identify the associations between hormone action and the clinical findings of hormone excess or deficiency
- To recognize the different etiologies of endocrine disease
- To learn and describe analytical aspects of endocrinology laboratory including immunoassay (ELISA,RIA,IRMA,etc), chemiluminescence, direct fluorescence, fluorescence polarization
- To learn and to describe laboratory techniques used in molecular biology, and in the techniques used to identify genetic abnormalities including Northern blot, Southern blot, FISH, PCR, DNA methylation and sequencing

PRACTICE-BASED LEARNING:

To develop life-long learning skills, professional integrity to self-evaluate patient care practices and knowledge; to identify areas of weakness and to improve patient care practices; to facilitate the learning of medical students, residents and other health care professionals

Goal:

Develop long-term learning plan and self-adjustment

Objectives:

- Identify personal areas for improvement and learning needs
- To develop and implement strategies to improve knowledge and skills related to patient care and research projects
- Identify available, relevant sources of information for self-education and future reference
- Acquire the knowledge, skills and attitudes necessary for lifelong learning and self-assessment

Goal:

Critically analyze the scientific evidence and current medical information and apply it to their approach to patient care

Objectives:

- To learn how to read, critically analyze and to interpret the medical literature
- Know basic statistical terms including mean, mode, median, standard deviation, standard error, etc.
- Demonstrate understanding of the basic appropriate statistical tests to analyze data
- Apply knowledge of research study design and statistical methods to the appraisal of clinical studies and apply their approach to patient care

Goal:

Quality improvement

Objectives:

- To become familiar with the fellowship program quality improvement project requirement
- To identify an area of patient care requiring improvement and to present and develop a plan based on scientific evidence
- To become proficient with the evolving computerized medical information technology training skills

Goal:

Facilitate the learning of medical students, residents and other health care professionals

Objectives:

- Participate in pediatric case presentations with students and residents
- Review options in management with students and residents

Interpersonal Communication Skills:

To observe, acquire, develop and enhance interpersonal and communication skills that enable fellows to establish and maintain professional relationships and exchange of information with patients, families, and other health care professionals

Goal:

Oral communication skills

Objectives:

- To create and sustain a therapeutically beneficial relationship with patients and families
- Demonstrate ability to understand patients with chronic diseases
- To demonstrate the ability to listen, to use non-judgmental questioning and to communicate effectively
- To observe and become familiar with the best practices to teach and communicate information effectively to audiences of different backgrounds including patients, students, residents, consultants and other members of the healthcare team
- Demonstrate ability to communicate effectively and to triage phone calls received

Goal:

Written communication skills

Objectives:

- To document thoroughly and accurately the information about the patient following the policies of the medical records department and maintaining patient confidentiality
- To document and communicate clearly the diagnosis, plan of action, medical orders, progress and discharge summaries
- To be able to provide clear and effective consultation reports to other health care professionals

Professionalism:

Goal:

Demonstrate a commitment to carry out professional responsibilities for patient care; to develop skills for adherence to ethical principles and sensitivity to a diverse patient population in the clinical and research environments

Objectives:

- To demonstrate a commitment to ethical principles pertaining to patient care and participation in research protocols
- To develop a clear understanding of the ethical, financial and legal issues relating to patient care in the clinic and in the hospital setting
- To demonstrate respect, compassion, integrity and responsiveness to the needs of the patient and their families
- To develop cultural and health disparity sensitivity
- To demonstrate professional behavior, responsibility, and accountability towards patient care and colleagues
- To participate in community programs that improve the quality of life of the patients
- To advocate for children with endocrine disorders, including diabetes and obesity
- To become familiar with the ethical and legal implications of the management of patients with disorders of sexual differentiation
- Demonstrate good practice and adherence to patient confidentiality and safe environment policies

Systems-Based Practice

Goal:

To develop awareness and responsiveness to the larger context and system of health care and to demonstrate the ability to effectively call on system resources to provide care that is of optimal value, safe and cost effective.

Objectives:

- To observe and understand the value of high quality but fiscally responsible health care, and demonstrate a cost effective medical practice without compromising quality of care
- Identify regulatory and business management issues important in the development and management of the pediatric endocrinology office
- Observe and learn the proper documentation and coding for billing purposes, including CPT and ICD codes
- Function effectively as part of a multidisciplinary health care team
- Identify the limitations of the neonatal screening for diagnosis of hypothyroidism and CAH
- Observe the role of the pediatric endocrinologist in advocating and in the implementation of the neonatal screening program
- Participate in continuing medical education, and practice based learning and improvement

Instructional Strategy:

- Direct observation of attending and senior fellows in the evaluation of patients
- Read and discuss available information about pediatric endocrinology conditions
- Direct observation and supervision of fellow by attending physician during fellow/patient interaction
- Immediate instruction from faculty
- Clinic conference is held during or after each endocrine/diabetes clinic during which patients seen are briefly presented and the disposition discussed
- Evaluation of patients on arrival and during management follow-up in the ICU
- Discussion of case with ICU and endocrine attending
- Follow patients through hospitalization
- Daily clinical and teaching rounds
- Evaluation of patients from different racial and ethnic background, widely diverse medical and support staff in the LSUHSC and Children's hospital systems

- New fellows assume a panel of patients previously cared for by graduating fellows
- The new fellow will add continuity patients to this panel obtained from patients discharged from the in-patient services or consultations
- Additional patients added by fellows' own special interest
- Outpatient Healthy Lifestyles Clinic with Dr. Sarah Stender
- Provide consultation support to the ER, pediatric inpatient services, PICU, NICU and cardiac units
- Observation and participation in interdisciplinary conferences
- Writing endocrine consultation
- Presentation and discussion of patients with the psychology, social services and psychiatry consultants
- Continuity of care in the inpatient and outpatient setting to follow the tendencies of the clinical and biochemical measurements
- Lecture on business aspects of clinical practice
- Time management and scheduling of clinical and academic/research responsibilities
- Meeting with pediatric endocrinology faculty, staff and program director
- Review images with radiology attending
- Compare his/her reading with radiology report
- Gather essential information through reading educational material (texts, journals)
- Didactic sessions oriented toward endocrine diseases of different age groups
- Prismatic case presentation and discussions
- Reading the text and examining the pictures of the Greulich and Pyle Radiographic Atlas of Skeletal Development of the Hand and Wrist
- Professionalism classes by the LSUHSC Office of Medical Education Research and Development (OMERAD)

Evaluation Strategies:

- Immediate feedback from faculty
- Global evaluation every 3 months
- 360 evaluations by residents, students, nurses and families
- In-Training exam