

Adult Endocrinology Subspecialty Educational Program Overall Goals and Objectives

DESCRIPTION

The University of Florida-Jacksonville Endocrinology Educational Program is a two-year program encompassing both clinical and research experience and instruction. Rotations for Year 1 include six one-month rotations on the Adult Endocrinology Consultation Service at UF Health Jacksonville Medical Center, three months at University of Florida Southside ambulatory clinic and three months on the research rotation. In the second year, two months are devoted to the adult endocrinology service at UF Health Jacksonville Medical Center, three months on University of Florida Southside ambulatory clinic outpatient, one month of pediatric endocrinology at Nemours Clinic Jacksonville and Wolfson Children's Hospital, one month of reproductive endocrinology at Jacksonville Center for Reproductive Health and five months on the research rotation. Fellows have ambulatory care experiences including two half-day/week continuity clinics during the first year and the second year. They participate in faculty clinics, thyroid biopsy and other outpatient procedures as first and second year fellows. Additional ambulatory care experiences are included during the pediatric and reproductive endocrinology rotations.

OVERALL PROGRAM GOALS

The goals of the University of Florida Jacksonville Endocrinology Subspecialty Training Program are:

1. To provide comprehensive instruction and experience in clinical endocrinology, including evaluation and treatment of disorders of the hypothalamus, pituitary, parathyroid, thyroid, endocrine pancreas, gonadal and adrenal glands, as well as diabetes mellitus, obesity, dyslipidemias, hypertension, bone diseases, neuroendocrine diseases, and metabolic disorders sufficient for the fellow to acquire the competency of a specialist in the field.
2. To provide an introduction to the principles of clinical and laboratory research and to provide experience in relevant endocrinologic investigations.

MEDICAL KNOWLEDGE

Goal

Fellows must acquire knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

Specific objectives:

1. First year fellows are expected to:
 - a. Define and describe biochemistry and physiology, including cell and molecular biology, as related to endocrinology, diabetes, and metabolism throughout the life cycle from conception to senescence, and will be expected to:
 1. Identify the relationships of genetics and endocrine diseases.
 2. Describe developmental endocrinology, including growth and development, sexual differentiation, and pubertal maturation.
 3. Describe endocrine physiology and pathophysiology in systemic diseases and principles of hormone action.
 4. Discuss the concepts of signal transduction pathways and biology of hormone receptors.
 5. Review immunologic aspects of diabetes and other endocrinologic diseases.
 6. Describe pathogenesis and epidemiology of diabetes mellitus.
 7. Implement safely the evaluation and management of type-1 and type-2 diabetes, including:
 - a. acute, life-threatening complications of hyper- and hypo-glycemia;
 - b. intensive insulin management in critical care and surgical patients;
 - c. long term goals, counseling, education and monitoring;
 - d. intensive management of glycemic control in the ambulatory setting;
 - e. prevention and surveillance of microvascular and macrovascular complications;

- f. diabetes detection and management during pregnancy; and
- g. multidisciplinary diabetes education and treatment program
- 8. Outline the role and principles of intensive diabetes management, as well as the role of whole organ and islet cell pancreatic transplantation.
- 9. Assemble safe management strategies in disorders of fluid, electrolyte, and acid-base metabolism; disorders of bone and mineral metabolism, with particular emphasis on the diagnosis and management of osteoporosis; calcium, phosphorus, and magnesium imbalance; diagnosis and management of ectopic hormone production; endocrine adaptations and maladaptations to systemic diseases; endocrine aspects of psychiatric diseases; parenteral nutrition support; nutritional disorders of obesity, anorexia nervosa, and bulimia; diagnosis and management of lipid and lipoprotein disorders.
- 10. Design the evaluation and management of hormonal problems including diseases, infections, neoplasms and other causes of dysfunction of the following endocrine organs:
 - a. hypothalamus and pituitary;
 - b. thyroid;
 - c. adrenal cortex and medulla;
 - d. pancreatic islets;
 - e. ovaries and testes; and
 - f. parathyroid.
- 11. Discuss appropriate utilization and interpretation of clinical laboratory, radionuclide, and radiologic studies for the diagnosis and treatment of endocrine and metabolic diseases, as well as knowledge of basic laboratory techniques, including quality control, quality assurance, and proficiency standards.
- 12. Describe the elements of experimental design and clinical implications, and acquire hands on experience with investigational procedures relevant to endocrinology.

2. Second Year Fellows

- a. Under faculty observation and guidance, the fellow will synthesize biochemistry and physiology, including cellular and molecular biology, as related to endocrinology, diabetes, and metabolism, to colleagues and trainees including:
 - 1. Apply genetic concepts as they relate to endocrine diseases.
 - 2. Illustrate normal and abnormal developmental endocrinology, including growth and development, sexual differentiation, and pubertal maturation.
 - 3. Illustrate normal endocrine physiology and pathophysiology in systemic diseases and principles of hormone action.
 - 4. Describe signal transduction pathways and biology of hormone receptors.
 - 5. Relate current immunologic concepts to diabetes and other endocrinologic diseases.
 - 6. Apply knowledge of pathogenesis and epidemiology of diabetes mellitus in developing treatment plans.
 - 7. Implement safe and comprehensive evaluation and management of diabetes mellitus, including:
 - a. acute, life-threatening complications of hyper- and hypo-glycemia;
 - b. intensive insulin management in critical care and surgical patients;
 - c. long term goals, counseling, education and monitoring;
 - d. intensive management of glycemic control in the ambulatory setting;
 - e. prevention and surveillance of microvascular and macrovascular complications;
 - f. diabetes detection and management during pregnancy; and
 - g. multidisciplinary diabetes education and treatment program.
 - 8. Choose the appropriate utilization and principles of intensive diabetes management, as well as the role of whole organ and islet cell pancreatic transplantation.
 - 9. Select appropriate evaluation and management in disorders of fluid, electrolyte, and acid-base metabolism; disorders of bone and mineral metabolism, with particular emphasis on the diagnosis and management of osteoporosis; calcium, phosphorus, and magnesium imbalance;
 - 10. Construct an algorithm for the diagnosis and management of ectopic hormone production; endocrine adaptations and maladaptations to systemic diseases; endocrine aspects of psychiatric diseases; parenteral nutrition support; nutritional disorders of obesity, anorexia nervosa, and bulimia; diagnosis and management of lipid and lipoprotein disorders.

11. Plan and execute the evaluation and management of hormonal problems including diseases, infections, neoplasms and other causes of dysfunction of the following endocrine organs:
 - a. hypothalamus and pituitary;
 - b. thyroid;
 - c. adrenal cortex and medulla;
 - d. pancreatic islets;
 - e. ovaries and testes; and
 - f. parathyroid.
- b. Propose appropriate utilization and interpretation of clinical laboratory, radionuclide, and imaging studies for the diagnosis and treatment of endocrine and metabolic diseases. Presentations of clinical cases will appraise basic laboratory techniques, including quality control, quality assurance, and proficiency standards.
- c. Organize elements of experimental design and clinical implications, and utilize appropriate techniques for a research question.

PATIENT CARE

Goal

Fellows must provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Specific objectives:

Fellows must be able to develop an evaluation and management plan for endocrinologic diagnosis and treatment and employ and interpret appropriate laboratory tests and imaging procedures with the following specific objectives:

1. First year fellows will develop skills and second year fellows will conduct the evaluation and management of hormonal problems including diseases, infections, neoplasms and other causes of dysfunction of the following endocrine organs:
 - a. Hypothalamus and pituitary
 - b. Thyroid gland
 - c. Adrenal cortex and medulla
 - d. Pancreatic islets
 - e. Ovaries and testes
 - f. Parathyroid glands
2. First year fellows will develop skills and second year fellows must conduct the evaluation and management of type 1 and type 2 diabetes including:
 - a. Acute, life-threatening complications of hyper- and hypo-glycemia
 - b. Intensive insulin management in critical care and surgical patients
 - c. Long term goals, counseling, education and monitoring
 - d. Intensive management of glycemic control in the ambulatory setting
 - e. Prevention and surveillance of microvascular, macrovascular and neuropathic complications
 - f. Diabetes detection and management during pregnancy
 - g. Principles of patient diabetes education and management programs
3. First year fellows will develop skills and second year fellows will conduct the evaluation and management of multifactorial disorders associated with hormonal regulation including:
 - a. Disorders of fluid, electrolyte, and acid-base metabolism
 - b. Disorders of bone and mineral metabolism with particular emphasis on the diagnosis and management of osteoporosis
 - c. Calcium, phosphorus, and magnesium imbalance.
 - d. Diagnosis and management of ectopic hormone production
 - e. Endocrine adaptations and maladaptations to systemic diseases
 - f. Endocrine aspects of psychiatric diseases
 - g. Parenteral nutrition support
 - h. Nutritional disorders of obesity, anorexia nervosa, and bulimia

- i. Diagnosis and management of lipid and lipoprotein disorders
- j. Genetic screening and counseling for endocrine and metabolic disorders

Technical and Other Skills:

1. First year fellows will develop skills and second year fellows will conduct the performance of the following:
 - a. Interpretation of laboratory studies, including the effects of nonendocrine disorders on these studies.
 1. Interpretation of hormone assays
 2. Performance and interpretation of stimulation and suppression tests (including tests of the adrenal-pituitary-hypothalamic axis, water deprivation tests, growth hormone stimulation and suppression tests, renin-aldosterone suppression and stimulation tests 72 hour fast for hypoglycemia, and glucose tolerance tests for diabetes and metabolic syndromes)
 - a. Interpretation of radiologic and imaging studies for diagnosis and treatment of endocrine and metabolic diseases including:
 - i. radionuclide uptake and localization studies of endocrine tissue
 - ii. ultrasonography of the soft tissues of the neck
 - b. Performance of fine needle aspiration of the thyroid, and performance of thyroid ultrasound.
2. First year fellows must develop skills and second year fellows will conduct interpretation of the following:
 - a. Radiologic measurement of bone density and other tests used in the management of osteoporosis and other metabolic bone diseases.
 - b. Radiologic studies used in the evaluation of patients with endocrine disorders, such as CT, and MRI.

PRACTICE- BASED LEARNING AND IMPROVEMENT

Goal

Fellows will 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. Fellows are expected to develop skills and habits to be able to:

Specific objectives:

1. First year fellows
 - a. Locate, appraise and assimilate evidence from scientific studies related to their patients' health problems and use information technology to optimize learning (e.g., computer based information systems).
 - b. Describe ways to systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement
2. Second year fellows
 - a. Design and implement a quality improvement project regarding their own clinic population.
 - b. Incorporate formative evaluation feedback into daily practice competencies
3. First and second year fellows are expected to review current literature and apply evidence-based medical practices in the care of patients.
4. All fellows will attend the weekly Endocrine Conference, Journal Clubs and other specific conferences. Each fellow is expected to present 3 Endocrine conferences and 3 Journal Clubs per year with formative feedback from faculty and peers.
5. Fellows will participate in Quality Improvement projects and will be expected to participate in oral and written critique of patient management and to identify areas for improved care.
6. Fellows will receive formative written evaluations by faculty at the end of rotations, following conference presentations, and quarterly summary 360 degree evaluations, and are expected to use feedback for self-improvement.
7. Identify strengths, deficiencies, and limits in one's knowledge and expertise;
8. set learning and improvement goals; identify and perform appropriate learning activities;
9. Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement;
10. Participate in the education of patients, families, students, fellows and other health professionals.

SYSTEMS BASED PRACTICE

Goal

Fellows will evaluate the larger context and system of health care, as well as the ability to call harness other resources in the system to provide optimal health care.

Specific objectives:

1. First year fellows
 - a. Locate, appraise and assimilate evidence from scientific studies related to a systems based issue that impacts patient care.
 - b. Describe ways to systematically analyze the elements in the process, using quality improvement methods.
2. Second year fellows
 - a. Design and implement a systems based quality improvement project regarding hospital or clinic population.
 - b. Incorporate formative evaluation feedback into systems based practice.
3. All fellows are expected to:
 - a. Recognize and utilize medical, surgical, and psychological consultation services available within UF Health Jacksonville, as well as methods for patient referral to diabetes education, nutrition, rehabilitation, and social services.
 - b. Employ patient resources within the community relevant to needs of patients with diabetes and disorders of the endocrine system (e.g., educational resources, consumer organizations, advocacy and support groups, and professional societies).
 - c. Retrieve patient records and laboratory data from within the local system, and from referring health care providers, or previous and concurrent sites of patient care.
 - d. List appropriate avenues for obtaining laboratory and imaging tests and recommended therapies for patients belonging to contracted health management organizations and insurance providers.
 - e. Participate as a team member in situations requiring interdisciplinary patient care in both inpatient and outpatient settings.

PROFESSIONALISM

Goal

Fellows will complete professional responsibilities and an adherence to ethical principles. Fellows are expected to practice during the first and second year:

1. Compassion, integrity, and respect for others
2. Responsiveness to patient needs that supersedes self-interest
3. Respect for patient privacy and autonomy
4. Accountability to patients, society, and the profession
5. Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation
6. Commitment to scholarship through presentations of conferences, literature reviews or publications related to personal research and clinical cases.

7. Development of effective teaching skills for instruction of patients, peers, and other health care professionals through conference presentations and on an individual level.

INTERPERSONAL AND COMMUNICATION SKILLS

Goal

Residents will employ interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates.

Specific objectives:

Fellows are expected to:

1. Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
 - a. Use simple nontechnical language for oral and written communications and instructions
 - b. Use appropriate interpreters for language barriers and sensory impairments
2. Communicate effectively with physicians, other health professionals, and health related agencies
 - a. Write timely, appropriately comprehensive consultation notes and letters with clear assessments and management plans.
 - b. Write or relay unambiguous orders, instructions and recommendations.
3. Complete comprehensive, timely, and legible medical records
4. Present effective teaching conferences using logical organization and appropriate audio-visual media.
5. Effectively teach and share literature resources with students, other residents, and referring physicians on an individual basis.
6. Publish at least one original or review manuscript in a medical journal, or present at least one abstract at a regional or national meeting by the end of year 2 of training.