Internal Medicine Curriculum
Endocrinology and Metabolism

Contact Person: Dr. David Huffman

Educational Purpose
Maintaining normal endocrine function is crucial for optimal health. Both primary and secondary endocrine processes cause disease states. During the one-month endocrinology and metabolism rotation, the PGY2 or 3 resident will learn about normal endocrine function as well as common and uncommon endocrine disorders and their evaluation and management. The major objective of this rotation is to train residents to apply the principles of endocrinology to the management of common physiologic derangements. Residents will be exposed to a broad spectrum of endocrinologic disorders demonstrating the clinical relevance understanding metabolic and physiologic derangements. The socioeconomic and health benefits of optimal control of diabetes are emphasized. Occupational behavioral factors often affect the chronic management of many endocrinologic conditions.

Teaching Methods
Residents in the Endocrinology and Metabolism rotation participate in didactic teaching conferences with the scheduled attending. They will evaluate new patients presenting with problems as well as review the ongoing maintenance and treatment of diagnosed disorders. By completing required reading lists, the residents will have the opportunity to develop in-depth knowledge of endocrinologic principles as well as to study those disorders not personally evaluated during the rotation. Opportunities to teach other house staff often occur while completing inpatient or outpatient consultations.

Disease Mix
The following topics are emphasized during the endocrinology/metabolism rotation.
A. The performance and interpretation of thyroid function tests and immunoassay techniques.
B. The essentials of diabetic care including intensive insulin management of Type 1 diabetes, recommended guidelines to avoid chronic complications such as nephropathy, retinopathy, and neuropathy.
C. Optimal management of the patient with Type 2 diabetes.
D. Evaluation and management of diabetic ketoacidosis.
E. Evaluation and management of hyperosmolar nonketotic states.
F. Diagnosis and management of thyrotoxicosis, hypothyroidism including myxedema crisis, Graves disease, management of the thyroid nodule, and differentiated thyroid cancer.
G. Evaluation and management of hypercalcemia including hyperparathyroidism.
H. Metabolic bone disease including osteoporosis and osteomalacia.
I. Pituitary disorders including prolactinoma, acromegaly, and non-secreting tumors.
J. Management of Cushing syndrome, Cushings disease and ectopic steroid production.
K. Multiple endocrine neoplasia syndromes.
L. Multiple endocrine autoimmune failure syndromes.
M. Addison’s disease and acute adrenal crisis.
N. Hypopituitarism.
O. Evaluation for pheochromoctyoma, carcinoid syndrome, and mastocytosis.
P. Evaluation of galactorrhea and gynecomastia.
Q. Congenital disorders presenting as adult diseases such as Turners syndrome, Kleinfelters syndrome, congenital adrenal hyperplasia. R. Feminizing disorders.
S. Diabetes insipidus.

Patient Characteristics
In contrast to most resident rotations, the endocrinology/metabolism rotation primarily involves outpatients and, generally, those in stable conditions. Residents will have the opportunity to experience management of stable diabetic patients and learn about the disabilities exacerbated by poor control. The patients seen on the rotation will reflect a wide socioeconomic base including patients from the endocrinologist’s private practice as well as in the resident clinic and the hospital consultation service.

Types of Clinical Encounters
Patient evaluated on this rotation will primarily be outpatient in the office of the faculty endocrinologist as well as in the resident endocrinology clinic. Residents will be supervised at all times by on-site faculty members and will have the opportunity to discover the importance of allied nursing personnel in the optimal management of diabetes. The importance of diabetic nurse educators is emphasized daily.

Procedures and Services
Residents will have the opportunity to occasionally observe thyroid biopsies as well as participate in various stimulation and collection procedures to identify syndromes of excess or insufficient hormonal production.

Reading List
1. MKSAP 14, Endocrinology and Metabolism.
2. Insulin Analogues. NEJM January 13, 2005
5. Current literature as assigned by the faculty supervisor

Pathological Material
Residents will be encouraged to review biopsies obtained during this rotation as well as the pathological material from those patients undergoing surgical procedures to diagnose or treat endocrinologic conditions. Occupational and environmental issues concerning radiation contamination and disposal of low level radioactive waste from the treatment of thyroid disorders will be discussed.
Method of Evaluation of Resident Performance
Residents will be evaluated in the following manner:
A. Discussion of assigned topics and required reading by the faculty member and resident.
B. Assessment of resident skills in evaluating patients presenting with endocrinologic complaints.
C. Completion of required reading list.
D. Completion of all required clinical teaching sessions.
E. Attending end-of-month written evaluation.
# Metabolism Curriculum

Inter/Resident: ________________________________  Circle one:  PGY 1  2  3

Supervising Faculty: ______________________________  Month __________________

<table>
<thead>
<tr>
<th>Rotation Check List</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Reviewed the goals and objectives at the beginning of the rotation</td>
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<tr>
<td>Evaluation and feedback mid month</td>
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<td>Evaluation and feedback at the end of rotation</td>
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<tr>
<td>Attended all scheduled clinic sessions</td>
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<tr>
<td>Completed assigned readings of insulin-dependent and non-insulin</td>
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<td>Completed required case reports/abstracts/posters</td>
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<tr>
<td>Reviewed and met the core competencies as outlined above</td>
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<td>Literature search on assigned topics with attending discussions</td>
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<td>Worked with an interdisciplinary team</td>
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<tr>
<td>Participated and observed appropriate procedures and demonstrated professionalism in obtaining informed consent</td>
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Intern/Resident Signature ___________________________  Date __________________

Supervising Faculty _______________________________  Date __________________

All items must be completed for rotation credit and checklist returned to the Department of Medicine at six month evaluation.

Accreditation Council on Graduate Medical Education

“Every competency can be taught with every patient.” B. Joyce, 2006
http://www.acgme.org/Outcome

PATIENT CARE
Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:

- communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- gather essential and accurate information about their patients
- make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- develop and carry out patient management plans
- counsel and educate patients and their families
- use information technology to support patient care decisions and patient education
- perform competently all medical and invasive procedures considered essential for the area of practice
- provide health care services aimed at preventing health problems or maintaining health
- work with health care professionals, including those from other disciplines, to provide patient-focused care

MEDICAL KNOWLEDGE
Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care. Residents are expected to:

- demonstrate an investigatory and analytic thinking approach to clinical situations
- know and apply the basic and clinically supportive sciences which are appropriate to their discipline

PRACTICE-BASED LEARNING AND IMPROVEMENT
Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Residents are expected to:

- analyze practice experience and perform practice-based improvement activities using a systematic methodology
- locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems
- obtain and use information about their own population of patients and the larger population from which their patients are drawn
- apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
• use information technology to manage information, access on-line medical information; and support their own education
• facilitate the learning of students and other health care professionals

INTERPERSONAL AND COMMUNICATION SKILLS
Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients' families, and professional associates. Residents are expected to:
• create and sustain a therapeutic and ethically sound relationship with patients
• use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
• work effectively with others as a member or leader of a health care team or other professional group

PROFESSIONALISM
Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Residents are expected to:
• demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supercedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development
• demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
• demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities

SYSTEMS-BASED PRACTICE
Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Residents are expected to:
• understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice
• know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
• practice cost-effective health care and resource allocation that does not compromise quality of care
• advocate for quality patient care and assist patients in dealing with system complexities
• know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance
## Endocrinology Rotation Checklist

**Intern/Resident** ______________________________Circle one:  PGY  2 or  3

**Supervising Faculty** ___________________________**Month:** ___________________

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<td>Completed required case reports/abstracts/posters</td>
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<td>Performed at or above the expected PGY level. Please check one.</td>
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<td><strong>PGY 1 Residents are responsible</strong></td>
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<td>- for gathering relevant patient data</td>
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<td>- performing and interpreting physical examination findings</td>
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<td>- perform basic procedures and interpret data</td>
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<td>- interpret laboratory tests</td>
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<td>- interpret basic radiographic studies</td>
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<td><strong>PGY-2 will have improved competence and demonstrate</strong></td>
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<td>- improved data gathering and physical examination skills</td>
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<td>- improved knowledge</td>
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<td>- improved decision making</td>
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<td>- enhanced ability to counseling</td>
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<tr>
<td><strong>PGY-3 will approach mastery and demonstrate the ability to function as consultant</strong></td>
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- Reviewed and met the core competencies as outlined. Please give at least one additional example.

**A Patient Care**
- Taking a complete history focused on the identification of specific symptoms representing endocrine disorders
- Performing a thorough physical examination focused on findings that represent underlying endocrine disorders

**B. Medical Knowledge**
- Applies clinical epidemiologic and social-behavioral science knowledge to the care of the patient
- Complete the required reading list
- Demonstrated competency in diagnostic evaluation and management of suspected pheochromocytoma, hyperosmolar nonketotic states, hypothyroidism, and patients with the stated disease mix
- Demonstrate knowledge of current guidelines for NIDDM and IDDM management
**C. Practice Based Learning**
- Residents will develop and implement treatment plans by utilizing appropriate information systems and resources to help manage patients presenting with endocrinological disorders
- Undertakes self-evaluation with insight and initiative
- Will adapt learning and evidence based medicine to own patient practice

**D. Interpersonal and Communication Skills**
- Residents will communicate diagnosis, treatment plan and follow up care to patients and their families
- Residents will communicate with staff, diabetes educators and other personnel of the specialty clinic
- Resident will conduct culturally sensitive interviews

**E. Professionalism**
- Residents will recognize the importance of patient preferences when selecting diagnostic and therapeutic options.
- Commitment to ethical principles pertaining to the provision or withholding of care, patient confidentiality, informed consent, and business practices
- Participated and observed appropriate procedures and demonstrated professionalism in obtaining informed consent

**F. Systems-Based Practice**
- Residents will be able to develop, implement and evaluate treatment plans for patients that include determining when to obtain consultations
- Advocates for quality patient care and assists patients in dealing with health system complexity
- Uses systematic approaches to reduce errors and enhance care

Resident Signature_________________________________ Date__________

Supervising Faculty _________________________ Date _________