

**University of Michigan Health System
Internal Medicine Residency**

Endocrinology and Metabolism Curriculum: Outpatient Elective

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Rotation Goals and Educational Purpose

Metabolism, endocrinology, and diabetes are essential fields of study for the effective internist. As obesity overtakes other conditions as the leading preventable condition contributing to morbidity, and as diabetes grows in prevalence, metabolic disorders are a driving force in healthcare. In addition, internists must have a finely honed and astute approach to rational history and physical examination in order to differentiate suspected endocrinologic disorders. The goal of the endocrinology and metabolism rotation is to refine the physician's approach to common endocrinology problems seen in the primary care setting, as well as to provide opportunities to diagnose, evaluate, and manage rare endocrine and metabolic disorders.

Rotation Competency Objectives

In supplement to the University of Michigan Longitudinal Learning Objectives, the following provide an overview of the knowledge, skills, and behaviors promoted in this rotation.

- I.** Patient Care – By completion of the rotation, residents will demonstrate
 - a. Physical examination skills necessary for detection of common findings: thyroid nodules, thyromegaly, diabetic retinopathy, diabetic foot complications, diabetic neuropathy, and manifestations of glucocorticoid excess;
 - b. History taking, medical decision making, and clinical judgement necessary for development of diagnostic and management plans for common endocrinologic conditions;
 - c. Appropriate ordering and interpretation of common radiologic diagnostic procedures, including bone mineral density, thyroid radionuclide and ultrasound studies, and hypothalamic/pituitary MRI.
- II.** Medical Knowledge - By completion of the rotation, residents will demonstrate knowledge of pathophysiology, clinical presentations, laboratory diagnosis, radiologic diagnosis, complications, and therapeutic modalities of the following common conditions, sufficient for diagnosis and initial medical management:

- a. Diabetes mellitus – types I and II
 - b. Hypoglycemic syndromes
 - c. Thyroid disorders
 - d. Hypothalamic and pituitary diseases
 - e. Hypercalcemia, metabolic bone disease, and vitamin D metabolic disorders
 - f. Endocrine hypertension
 - g. Adrenal disorders
 - h. Lipid metabolism
 - i. Nutrition and obesity
 - j. Male reproductive disorders, including hypogonadism and impotence
 - k. Female reproductive disorders, including amenorrhea and infertility
 - l. Hormone-producing neoplasms
- III.** Interpersonal and Communication Skills - By completion of the rotation, residents will
- a. Recognize the importance of patient and community education in the treatment of metabolic and endocrine disorders, including diabetes, lipid disorders, and obesity.
 - b. Demonstrate communication skills that support respectful patient-centered care.
 - c. Provide professionally appropriate consultative opinions to patients with multiple medically undiagnosed symptoms that do not meet criteria for endocrinologic or metabolic abnormalities.
 - d. Generate written documentation consistent with a hypothesis-generating approach to common endocrinologic conditions. Complete dictations in a timely manner, using common documentation standards.
- IV.** Professionalism – Throughout the rotation, residents will
- a. Respectfully and compassionately respond to patients with a multitude of phenotypic expressions of endocrinologic and metabolic disorders.
 - b. Compassionately respond to socio-behavioral and psychiatric complexities of common endocrinologic conditions, including diabetes, obesity, eating disorders, and disorders of sexual maturation.
- V.** Practice-Based Learning and Improvement – Throughout the rotation, residents will
- a. In response to measures of diabetic quality care, personally monitor and strive to improve skills necessary for optimal management of diabetic patients.
 - b. Demonstrate willingness to learn from error, use information technology to support self education, and facilitate learning of others.
- VI.** Systems-Based Practice - By completion of the rotation, residents will
- a. Recognize the importance of coordination with surgical and radiotherapy colleagues for the care of patients with thyroid diseases, pituitary and hypothalamic diseases, parathyroid disease, endocrine hypertension, and hormone-producing neoplasms.
 - b. Coordinate diabetic team care, including the contributions of podiatric, nutrition, and nursing specialists. Strive to facilitate care consistent with institutional initiatives for quality care of diabetes.

- c. Strive to provide cost-effective care incorporating awareness of available ancillary services.

Teaching Methods

- I. Supervised Patient Care: The emphasis of the rotation is on experiential learning through consultative management of outpatients. The rotation is 100% outpatient, with most clinics located in the Domino's Farms endocrinology and metabolism clinics (see Rotation Schedule below). Residents are under the full supervision of a faculty endocrinologist in each outpatient clinical venue. Patient-centered, case-based faculty discussions review each patient.

- II. Structured Didactics and Small Group Learning – Residents are expected to attend each of the following unless in conflict with their personal continuity clinic. Confirm
 - a. Fellows' Conference and Journal Club: Thursdays 1:00 PM – 2:30 PM, Domino's Farm Lobby G - 1500 (1st floor conference room). Clinical didactic presentations of common conditions, geared toward trainees. Once per month, the conference is devoted to journal club discussion.
 - b. Clinical Conference: Most Fridays, 2:00 – 3:00 PM, Brehm Tower 5th floor room 5050 ("CURE Room"). Clinical topics are reviewed for faculty, fellows, and residents. Schedules is available at:
http://www.med.umich.edu/intmed/endocrinology/edu/conferences_clinical.htm
 - c. Consultation Case Conference: Second Friday, 2:00 – 3:00 PM, Brehm Tower 5th floor room 5050 ("CURE Room"). Resident and fellow presentations of recent consultative cases, with case-based discussion.
 - d. Optional attendance for residents: Research Conference Thursdays at 3:00 - 4:00 PM, Brehm Tower 5th floor room 5050 ("CURE Room").

- III. Special projects – Each resident is expected to prepare at least one case for possible formal presentation at the biweekly Consultation Case Conference.

- IV. Independent study (including core reading and other educational resources)
 - a. Textbooks and Manuals
 - i. Harrison's Principles of Internal Medicine, chapters on endocrinology and metabolism, latest edition. Available online through Taubman Medical Library eBooks: <http://sitemaker.umich.edu/hslebooks/home>
 - ii. *Greenspan's Basic & Clinical Endocrinology*, most recent edition, available through Taubman Medical Library electronic resources via STAT!Ref using University of Michigan authentication at:
<http://online.statref.com/Document.aspx?grpalias=MLC&FxID=174&DocId=1>

 - b. Core clinical journals
 - i. *Endocrine Reviews* available online through Taubman Medical Library at:
<http://edrv.endojournals.org/>
 - ii. *The Journal of Clinical Endocrinology and Metabolism* available online through Taubman Medical Library at:
<http://jcem.endojournals.org/contents-by-date.0.shtml>

- c. Professional society guidelines and resources, as posted on websites
 - i. American Diabetes Association (ADA)
 - 1. Clinical practice recommendations, available at: http://professional.diabetes.org/CPR_Search.aspx
 - 2. disease briefings, searchable at: http://professional.diabetes.org/Disease_Backgrounder_Search.aspx
 - ii. The Endocrine Society
 - 1. Clinical Guidelines, available at: <http://www.endo-society.org/publications/guidelines/index.cfm>
- d. Online Learning
 - i. Thyroid Exam: The Stanford 25. Developed by Dr. Neil Gesundheit of Stanford University, this sight includes multiple educational videos: <http://stanford25.wordpress.com/thyroid-exam/>
 - ii. Johns Hopkins Internet Learning Center modules, available to all Michigan residents using their ambulatory care login (click on “available modules” to see all module titles): <http://www.hopkinsilc.org/>
 - 1. Diabetes
 - 2. Lipid Management
 - 3. Menopause and Hormone Therapy
 - 4. Obesity and Overweight
 - 5. Osteoporosis
 - 6. Thyroid Disease
- e. Sources of on-line news and recent research about metabolism, nutrition, and endocrinology
 - i. American Diabetes Association: http://professional.diabetes.org/News_Search.aspx
 - ii. Nature featured articles and journal watch: <http://www.nature.com/endocrinology/index.html>
 - iii. The Endocrine Society, Endocrine News: http://www.endo-society.org/publications/periodicals/endo_news/index.cfm

Evaluation Methods

Formative face-to-face feedback to residents by attendings is encouraged at mid-month. Each month, attendings complete online competency-based evaluations of each resident. The evaluation is shared with the resident, is available for on-line review by the resident at his/her convenience, and is sent to the residency office for internal review. The evaluation is part of the resident file and is incorporated into semiannual performance reviews for directed resident feedback.

Residents complete a service evaluation of the rotation faculty monthly.

Rotation Schedule

First Day protocol: Contact Dawn Vowler (see below) *at least 2 weeks* prior to start of the rotation to confirm your continuity clinic day/time and confirm specific endocrinology clinic assignments. Specific assignments will be based on faculty availability, previously scheduled learners, resident interests, and resident continuity clinic schedule.

Administrative Lead: Dawne M. Vowler, MEND Fellowship Coordinator, Domino’s Farm Lobby G, Suite 1500; 734-615-6964; dvowler@med.umich.edu

Continuity Clinic: General medicine continuity clinic continues, ½ day weekly.

Weekend duty: None.

Call duty: There is no night call.

SAMPLE Weekly Schedule

(Specific assignments are based on faculty availability, previously scheduled learners, resident interests, and continuity clinic schedule.)

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	General Endocrinology Or Obesity	Diabetes in Pregnancy Or Adrenal Tumor Or Multi-Disciplinary Thyroid	Bone and Mineral Or VA General Endocrinology	Fine Needle Aspiration Or Obesity	independent study and documentation completion (or Continuity Clinic)
PM	12:30 – 1:30 Residency Noon Conference General Endocrinology	12:30 Intern Report (Interns only) Pituitary Or Intensive Insulin	12:30 – 1:30 Residency Noon Conference Bone and Mineral	1:00 – 2:30 Fellows’ Conference or Journal Club Cystic Fibrosis	12:00 – 1:00 Internal Medicine Grand Rounds 2:00 – 3:00 Clinical Conference, Consultation Case Conference, or Combined Clinical/Research Conference

Additional Clinics Offered Outside the Endocrinology Division (by prior arrangement):

- Pediatric Endocrinology - Wednesday A.M.
- Reproductive Endocrinology - Wednesday A.M.
- Endocrinology Surgery - Tuesday A.M.
- Nuclear Medicine - Tuesday or Thursday A.M.
- Lipid Disorders - Thursday A.M.