

## UNIVERSITY OF COLORADO DENVER IN-PATIENT DIABETES CURRICULUM AND OBJECTIVES

**COURSE DIRECTOR &  
DIVISION EDUCATION COORDINATOR:**

**Boris Draznin, MD, PhD**  
303-724-2605  
Cell 303-808-5777  
Boris.Draznin@ucdenver.edu

**COURSE COORDINATOR:**

**Emily Fowler**  
303-724-3927  
Emily.Fowler@ucdenver.edu

**Office Location:**

UCD – Division of Endocrinology  
AMC Research Complex 1 - South  
7<sup>th</sup> Floor, Room 7103  
12801 E. 17<sup>th</sup> Avenue  
Aurora, CO 80045

**Mailing address:**

UCD – Division of Endocrinology  
MS 8106  
12801 E. 17<sup>th</sup> ave, room 7103  
Aurora, CO 80045

**Phone:** 303-724-3921  
**Fax:** 303-724-3920

If you have any questions or comments about this rotation, please feel free to contact Boris Draznin, M.D, PhD. at [Boris.Draznin@ucdenver.edu](mailto:Boris.Draznin@ucdenver.edu) or 303-724-2605.

*This paragraph only applies if you are rotating at the University of Colorado Hospital. Please review the rest of the curriculum below.*

*Specialty Residents must complete the Web-based Training for Touchworks for this rotation. To complete the training, please follow the instructions below and then notify the Ambulatory Training team via email at [UCH-AmbulatoryServicesTraining@uch.edu](mailto:UCH-AmbulatoryServicesTraining@uch.edu) that the training is complete. They will send you a login via email.*

1. Type [www.uch.edu](http://www.uch.edu) in the address field of your web browser.
2. Click the **For Employees** option in the upper-right corner of the page.
3. Under the **Other Helpful Links** section, select the [Ambulatory Services Training](#) link.
4. Under the **Web Based Training** section, select to complete each section: [Lesson1](#), [Lesson 2](#), [Lesson 3](#) links under title **TouchWorks for Specialty Residents**.

### EDUCATIONAL PURPOSE

In-patient diabetes management service encompasses a wide array of clinical conditions where diabetes is either a primary reason for admission or contributes significantly to the outcomes of the hospital stay. This rotation will help residents become proficient in diabetes-focused history and physical exam skills, learn the

appropriate selection and interpretation of insulin-based therapeutic regimens, and gain experience in integrating these to develop appropriate management plans for patients with diabetes admitted to ICUs, surgical, medical and ob/gyn floors. The resident will also be exposed to patients with complex diabetic problems and complications, and have the opportunity to interact with colleagues in other specialties to manage this patient population. This rotation will undergo continuous improvement using feedback from residents, medical students and fellows.

### **EDUCATIONAL GOALS**

- 1. To hone clinical problem-solving skills needed to evaluate and manage diabetes in hospitalized patients;**
- 2. To become familiar with clinical presentations and initial workup and management of complex diabetic problems and complications;**
- 3. To become knowledgeable regarding the appropriate circumstances for patient referral to a diabetologist for evaluation and management.**

### **PRINCIPAL TEACHING METHODS**

#### **I. Supervised direct patient care – Inpatient**

- A. Inpatient endocrine consult rounds** conducted 7 days of the week at the University of Colorado Hospital Anschutz Inpatient Pavilion (AIP)
- B.** Residents will perform the initial history and physical exam of patients referred for diabetes management consultation, and present the patients to the endocrinology team during formal rounds. Residents will complete a consult form (at UCH AIP) for review by the endocrine attending. Residents will follow the patient throughout the duration of the consult period and help with medical decision-making.
- C.** Residents may be expected to prepare at least one brief oral presentation on an inpatient diabetes management topic to present during rounds

#### **II. Didactic sessions**

- A.** Focused didactic lectures by attending physicians – mainly by attending physicians on the consult service. Didactic sessions on rounds may include endocrine pathophysiology, basic science knowledge in diabetes, appropriate use and interpretation of diagnostic tests, and diabetes management decision-making for common and more complex patients, and diabetes emergencies.
- B.** Informal teaching sessions by endocrine fellows on service, as time allows.

#### **III. Conferences**

- A.** Residents are expected to attend the following conferences during the inpatient diabetes management rotation:
  - 1.** Weekly bench to bedside Endocrine Grand Rounds, Wednesday mornings 8-9 am – most of these rounds are presented by faculty and fellows within our division or faculty outside the Department of Medicine, but approximately one lecture per month is presented by visiting faculty. Topics relate to current

- concepts and controversies in all areas of endocrinology, diabetes and metabolism.
2. Monthly in-patient diabetes management clinical research conference, third Tuesday of each month, 12:30 – 1:30 pm – attended by faculty from the diabetes management group.
  3. Monthly attendance of morning report for discussion of diabetes specific problems in patients admitted to the medical service.

## **EDUCATIONAL CONTENT**

### **I. Mix of endocrine conditions**

**A.** Residents will be exposed to patients with a wide spectrum of diabetic problems including type 1 diabetes on intensive insulin regimens or on insulin pumps, complex type 2 diabetes, hypoglycemia, hypoglycemia in patients on steroids, TPN, tube feeding, Hemodialysis, NPO, pre- and post surgical procedures, ante- and postpartum.

### **B. Patient characteristics**

1. Patients seen have a wide variety of different socioeconomic and health contexts.

### **II. Learning venues**

**A.** University of Colorado Hospital Anschutz Inpatient Pavilion inpatient wards (surgical, medical, transplant, rehab, labor and delivery) and intensive care units

### **III. Procedures**

- A.** History, physical exam skills needed for diagnosing, evaluating and managing diabetes
- B.** Laboratory interpretive skills
1. Tests needed to evaluate and manage diabetes and its complications
- C.** Consultative skills – residents will serve as diabetes management consultants to other services under the supervision of attending physicians and fellows

### **IV. Ancillary services**

- A.** All diabetology faculty at UCH.
- B.** Endocrinology fellows
- C.** Faculty in other specialties – surgery, medicine, anesthesiology, obstetrics and gynecology.
- D.** Residents from other training programs – surgery, anesthesiology, obstetrics and gynecology, pathology, medicine, psychiatry.
- E.** Case managers
- F.** Nursing staff
- G.** Other ancillary staff – clinical and administrative

### **V. Rotation schedule by week**

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	<ul style="list-style-type: none"> <li>Diabetes in-patient management team (AIP)</li> </ul>	<ul style="list-style-type: none"> <li>Diabetes in-patient management team (AIP)</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Diabetes in-patient management team (AIP)</li> <li>Endocrine Grand Rounds</li> </ul>	<ul style="list-style-type: none"> <li>Diabetes in-patient management team (AIP)</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Diabetes in-patient management team (AIP)</li> </ul>
PM	<ul style="list-style-type: none"> <li>Inpatient consults</li> <li>Inpatient rounds/didactics (AIP)</li> </ul>	<ul style="list-style-type: none"> <li>Inpatient consults</li> <li>Inpatient rounds/didactics (AIP)</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Inpatient consults</li> <li>Inpatient rounds/didactics (AIP)</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Inpatient consults</li> <li>Inpatient rounds/didactics (AIP)</li> </ul>	<ul style="list-style-type: none"> <li>Inpatient consults</li> <li>Inpatient rounds/didactics (AIP)</li> </ul>

AIP = ANSCHUTZ INPATIENT PAVILION

### ROTATION SCHEDULE DETAILS

**NOTE: THE EXACT TIMES FOR SEEING INPATIENT CONSULTS AND ROUNDING ARE SUBJECT TO MODIFICATION.**

### PRINCIPAL ANCILLARY EDUCATIONAL MATERIALS

Residents are provided web access to the Endocrinology, Diabetes, and Metabolism Curriculum and Objectives at the beginning of the rotation including the bibliography of key references and a syllabus of endocrine pathophysiology. Residents have access to endocrinology reference textbooks and other materials in the workroom of the Endocrine clinic (room 6632) at the AOP, 6<sup>th</sup> floor.

The following are other suggested sources of information to facilitate patient care and education in endocrinology:

- Harrison's Principles of Internal Medicine, 17<sup>th</sup> edition, 2008. editors Fauci AS, Braunwald B, Kasper DL, Hauser SL, Longo DL, Jameson JL, Loscalzo J.
  - ◆ Part 15. Endocrinology and Metabolism. Chapters 332-350 are particularly relevant
  - ◆ The online version is available through the Denison library website <http://hsclibrary.uchsc.edu>
    - On the home page select "Harrison's" in the column on the left. It should give you full text directly if you are on the AMC campus. Otherwise, connect to the full text by logging in with your university username and password.
- Diabetes Mellitus. LeRoith, Taylor and Olefsky, eds. 2004.
- American Diabetes Association Clinical Practice Recommendations 2011
  - ◆ *Diabetes Care* January 2011 issue, Supplement 1
  - ◆ Articles on multiple topics related to the care of patients with diabetes (standards of medical care, hypoglycemia and employment, nutrition, etc.) and references to past technical reviews on specific complications, inpatient, gestational, insulin use, emergencies, and more
- [www.EndoText.org](http://www.EndoText.org): A free on-line endocrine textbook authored by leaders in endocrinology that is updated periodically

- Williams Textbook of Endocrinology, 11<sup>th</sup> edition, 2008. Kronenberg HM, Melmed S, Polonsky KS, Larsen PR. Saunders Elsevier, Philadelphia.
  - ◆ The online version is available through the Denison library website <http://hsclibrary.uchsc.edu>
  - ◆ On the home page across the top select the tab that says “Search”, “Find a Book”. In the upper middle of the page is a beige box that says **Related**. Click “Online” and scroll to the bottom (the e-books are listed in alphabetical order). Select “Williams, Robert. Williams textbook of endocrinology” from the list, and connect to the full text directly (on AMC campus) or by logging in with your username and password.

### **In-Patient Diabetes Management ROTATION – RECOMMENDED ARTICLES**

1. American Diabetes Association. **Diagnosis and classification of diabetes mellitus.** *Diabetes Care* 2010;33 (Supp. 1):S62-69.
2. American Diabetes Association. **Executive Summary: Standards of medical care in diabetes - 2010.** *Diabetes Care* 2010;33(Supp. 1):S4-S10.
3. American Diabetes Association. **Position Statement: Standards of medical care in diabetes - 2010.** *Diabetes Care* 2010;33(Supp. 1):S11-S61.
4. Rosenzweig JL, Ferrannini E, Grundy SM, Haffner SM, Heine RJ, Horton ES, Kawamori R; Endocrine Society. **Primary prevention of cardiovascular disease and type 2 diabetes in patients at metabolic risk: an Endocrine Society clinical practice guideline.** *J Clin Endocrinol Metab* 2008;93(10):3671-3689.
5. Nathan DM, Buse JB, Davidson MB, Ferrannini E, Holman RR, Sherwin R, Zinman B; American Diabetes Association; European Association for Study of Diabetes. **Medical management of hyperglycemia in type 2 diabetes: a consensus algorithm for the initiation and adjustment of therapy: a consensus statement of the American Diabetes Association and the European Association for the Study of Diabetes.** *Diabetes Care* 2009;32(1):193-203.
6. Smith RJ, Nathan DM, Arslanian SA, Groop L, Rizza RA, Rotter JI. **Individualizing therapies in type 2 diabetes mellitus based on patient characteristics: what we know and what we need to know.** *J Clin Endocrinol Metab* 2010;95(4):1566-1574.
7. Skyler JS, Bergenstal R, Bonow RO, Buse J, Deedwania P, Gale EA, Howard BV, Kirkman MS, Kosiborod M, Reaven P, Sherwin RS; American Diabetes Association; American College of Cardiology Foundation; American Heart Association. **Intensive glycemic control and the prevention of cardiovascular events: implications of the ACCORD, ADVANCE, and VA Diabetes Trials: a position statement of the American Diabetes Association and a Scientific Statement of the American College of Cardiology Foundation and the American Heart Association.** *J Am Coll Cardiol* 2009;53(3):298-304.
8. Moghissi ES. **Addressing hyperglycemia from hospital admission to discharge.** *Curr Med Res Opin* 2010;26(3):589-598.
9. Peters A. **Incretin-based therapies: review of current clinical trial data.** *Am J Med* 2010;123(3 Suppl):S28-S37.

10. Boyle PJ, Zrebiec J. **Management of diabetes-related hypoglycemia.** *Southern Med J* 2007;100(2):183-194.
11. International Association of Diabetes and Pregnancy Study Groups Consensus Panel, Metzger BE, Gabbe SG, Persson B, Buchanan TA, Catalano PA, Damm P, Dyer AR, Leiva A, Hod M, Kitzmiller JL, Lowe LP, McIntyre HD, Oats JJ, Omori Y, Schmidt ML. **International association of diabetes and pregnancy study groups recommendations on the diagnosis and classification of hyperglycemia in pregnancy.** *Diabetes Care* 2010;33(3):676-682.
12. Kitabchi AE, Umpierrez GE, Miles JM, Fisher JN. **Hyperglycemic crises in adult patients with diabetes.** *Diabetes Care* 2009;32(7):1335-1343.
13. Sakharova OV, Inzucchi SE. **Endocrine assessments during critical illness.** *Crit Care Clin* 2007;23(3):467-490.

## **METHODS OF EVALUATION**

### **I. Resident performance**

- A. Inpatient diabetes management attendings will observe and evaluate the performance of, and complete computerized evaluation forms for each resident on the rotation, summarizing their performance on the inpatient consult service. The inpatient attending will meet individually with the resident during the rotation to give constructive feedback.
- B. Patient records (both written and electronic) written by the resident will be reviewed by the attending physicians on the consult services.

### **II. Program and faculty performance**

- A. Upon completion of the rotation, residents will complete evaluations of the rotation commenting on the quality of teaching, the faculty, the fellows, and the overall rotation experience. Evaluations are compiled and reviewed by the program and collective evaluations will serve as a tool for improving the rotation.

## **INSTITUTIONAL RESOURCES:**

- A. Faculty – each and every one of the diabetes management team is committed to teaching residents and students, and take pride in having a reputation as a division for excellence in teaching.
- B. Conferences – The Endocrine Division Grand Rounds are an excellent forum for bench-to-bedside presentations of current concepts and controversies in endocrinology, diabetes, and metabolism.
- C. Fellows – The fellows in our program have outstanding clinical and teaching skills. The resident conferences given by the fellows have consistently received “rave reviews” by previous residents doing this rotation.

## **ROTATION SPECIFIC COMPETENCY OBJECTIVES**

- I. **Knowledge** – The resident will demonstrate knowledge about inpatient diabetes management with an emphasis on patient evaluation and management
  - A. Diabetes: types 2 and 1

1. Intensive insulin regimens
2. Insulin pumps
3. Complications of diabetes
4. Hypoglycemia
5. Transition of patients from IV to subcutaneous insulin
6. Hyperglycemia in patients on steroids
7. Hyperglycemia in patients with Cystic Fibrosis
8. Hyperglycemia in patients with bone marrow transplantation
9. Hyperglycemia in patients with solid organ transplantation
10. Hyperglycemia in patients on TPN
11. Hyperglycemia in patients on tube feeding
12. Treatment of diabetic patients on Hemodialysis
13. Treatment of diabetic patients pre- and post operatively
14. Treatment of diabetes and pregnancy
15. Transition of diabetic patients to home or skilled nursing facility

**II. Clinical Skills** – The resident will demonstrate proficiency in the following clinical skills:

- A. Accurately perform and document diabetes-focused histories and physical exams based on the pathophysiology of patient complaints
- B. Identify and prioritize patients' problems, formulate appropriate differential diagnoses specific to diabetes-related situations, and develop appropriate plans for evaluation and management
- C. Appropriate screening for diabetes complications
- D. Present patients to the attending physician and to the team on rounds
- E. Follow-up patients seen for inpatient consults
- F. Order appropriate diagnostic tests, and interpret results of testing for diabetes and its complications

**III. Communication Skills** – The resident will demonstrate the following skills:

- A. Communicate effectively with patients and families regarding diagnosis, evaluation and treatment plans
- B. Communicate with referring physicians regarding evaluations and recommendations
- C. Communicate with specialists in surgery, radiology, pathology and laboratory medicine to obtain needed clinical information and plan treatment
- D. Demonstrate compassionate treatment of patients and respect for their privacy and dignity

**IV. Professional Behavior** – The resident is expected to demonstrate appropriate attitudes and behaviors in the following areas:

- A. Display integrity, honesty and appropriate boundaries with team members including attending physicians, fellows, residents, medical students, administrative staff, and clinical support staff
- B. Display integrity, honesty and appropriate boundaries with patients, patients' representatives and fellow specialists

C. Recognize the limits of one's knowledge and skills, and seek to overcome those limits

**V. Self-directed and Life-long Learning Skills**

A. Locate, evaluate and apply information for solving diabetes-related problems and make decisions relevant to the care of hospitalized individuals.