

# UC DAVIS INTERNAL MEDICINE RESIDENCY PROGRAM

## INTERN AMBULATORY CURRICULUM IN EVIDENCE BASED MEDICINE

### I. Educational Purpose

The UC Davis Intern Ambulatory Care Curriculum in Evidence Based Medicine (EBM) is designed to teach interns the principles of EBM, critical appraisal and practice-based learning and improvement.

### II. Principal Teaching Methods

#### A. Ambulatory Care Seminar series:

One half-day per week is dedicated to didactic session on EBM and common ambulatory care topics (i.e. diabetes tools and management, upper respiratory tract infections, contraception, etc). All interns on the ambulatory block meet as a group with Garth Davis, MD and Tonya Fancher MD, MPH.

1. Evidence Based Medicine: The first two hours of each weekly seminar are dedicated to EBM with Dr. Davis. This curriculum includes:

**Week 1:** The first week we discuss the concepts of:

- Certainty
- Decision making
- Terminology used in patient care versus the use of numeric probabilities
- 2 x 2 Table
- Sensitivity, specificity, positive predictive value, negative predictive value
- How prevalence influences PPV and NPV
- Homework assignment: review <http://gim.unmc.edu/dxtests/Default.htm> and “*Should general practitioners use the electrocardiogram to select patients with suspected heart failure for echocardiography?*” Houghton, AR, Sparrow NJ et al. International Journal of Cardiology 62 (1997) 31-36.

**Week 2:** This week is mostly dedicated to likelihood ratios (LR). We review the derivation of LRs using the data from the assigned article from week 1. We again review prevalence, PPV, NPV and now with LRs. We also review the 4 essential elements to formulating an answerable clinical question and review EBM resources.

**Weeks 3 and 4: Journal Club:** Interns will select a clinical question based on a recent patient encounter. Interns will perform a literature search under the assistance of Dr. Davis or Dr. Fancher. Documentation of the clinical question and their research efforts will be provided to Dr. Fancher and placed in their housestaff file. Each intern will present at least one article during each block.

**Week 5** During the second ambulatory block, we begin with:

- Review of basic statistics
- Review the anatomy of the answerable clinical question
- Review of basic and advanced strategies for searching Medline
- Review the practice based learning project

**Week 6:** We will continue our discussion of the practice based learning project:

- gathering data
- creating a data collection sheet
- analyzing and reporting data

**Week 7 and 8:** Each intern will present the results of their Practice Based Learning and Improvement Project (see below)

**B. Practice Based Learning and Improvement Project:**

Interns will select a clinical question in which they would like to improve their practice performance. Interns will perform a literature search under the assistance of Dr. Davis or Dr. Fancher. They will then identify between two to five patients from their practice who are representative of the area of concern and implement the change as needed. Documentation of the clinical question, their research efforts and results of the implementation in their sample population will be provided to Dr. Fancher and placed in their housestaff file. Each intern will present at least one article during each block.

**C. Direct supervised patient care in clinic settings:**

1 Continuity clinic: all interns continue to rotate through their continuity clinic for one half-day per week and continue to participate in the weekly pre-clinic journal clubs. The General Internal Medicine clinic is equipped with several computer terminals to facilitate real-time EBM and all staff members are asked to encouraged active information searching during precepting time.

2. General Medicine Urgent Care Clinics: the interns all do several half-day sessions in this urgent care setting. The General Internal Medicine clinic is equipped with several computer terminals to facilitate real-time EBM and all staff members are asked to encouraged active information searching during precepting time.

**III. Educational Goals and Objectives (see also expectations listed below)**

- A. Learn how to formulate an answerable clinical question
- B. Learn the basic statistics to enable critical review and understanding of medical evidence
- C. Learn how to quickly and accurately assess validity
- D. Learn the different strategies to reviewing studies of diagnostic tests versus therapeutic interventions versus systematic reviews
- E. Learn to quickly retrieve evidence during clinic
- F. Learn to incorporate evidence into practice by performing a limited research project
- G. Learn the appropriate utilization of tests and procedures.

**IV. Ancillary Educational Materials**

- A. Computer-based resources: available for online texts, clinical guidelines, and literature searches at multiple sites in the hospital and clinics and available at <https://ucdcruc.ucdmc.ucdavis.edu/servlet/CRCsignin>

- B. Textbooks are available in most clinic settings. There is a full medical library on the UC Davis Medical Center campus.
- C. Evidence-Based Medicine: Each intern is provided with a personal copy of Evidence-Based Medicine: How to Practice and Teach EBM, Second Edition 2000, by David Sackett et al.
- D. Web-based resources <http://gim.unmc.edu/dxtests/Default.htm>

## V. **Methods of Evaluation**

- A. Resident Performance: Interns will be evaluated based on their attendance and participation in the didactic session.
- B. Practice Based Learning and Improvement: As noted above, each intern will engage in evidence based medicine practice based learning improvement project, Documentation of the clinical question, their research efforts and results of the implementation in their sample population will be provided to Dr. Fancher and placed in their housestaff file. Successful completion of the project is required to pass the rotation.

## **Expectations**

<b>COMPETENCY</b>	<b>EXPECTATIONS OF INTERNS BY THE END OF THE ROTATION</b>
<b>PATIENT CARE</b>	<ul style="list-style-type: none"> <li>• practice up-to-date patient care based on continuous use of medical literature</li> </ul>
<b>MEDICAL KNOWLEDGE</b>	<ul style="list-style-type: none"> <li>• learn the basic tenets of evidence based medicine, including sensitivity, specificity, positive predictive value, negative predictive value, absolute risk reduction, relative risk reduction, and number needed to treat.</li> <li>• understand the derivation, utility, and use of likelihood ratios in medical decision making.</li> <li>• understand the basic principles for evaluating the validity and results of a randomized controlled trial.</li> </ul>
<b>PRACTICE-BASED LEARNING</b>	<ul style="list-style-type: none"> <li>• Locate, appraise, and assimilate evidence from the scientific literature to answer questions about the care of patients' health problems, where appropriate.</li> <li>• Use computers to manage information and access on-line information for the care of their patients.</li> </ul>
<b>INTERPERSONAL &amp; COMMUNICATION</b>	<ul style="list-style-type: none"> <li>• Educate patients on probable etiology of complaints and appropriate treatment measures. Using language appropriate to the patient and</li> </ul>

avoiding medical jargon.

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### **PROFESSIONALISM**

- Place care of the patient above self-interests.
  - Make a commitment to excellence and ongoing improvement.
  - Demonstrate sensitivity and responsiveness to patients' age, culture, gender, and disabilities.
  - Demonstrate integrity, respect, and compassion in all interactions.
    - Resident shows regard for opinions and skills of professional colleagues, including non-physician personnel.
  - Resident treats team members with respect, including nurses and other nonphysician healthcare providers.
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### **SYSTEMS-BASED PRACTICE**

- Recognize how their patient care and professional practices affect other healthcare professionals and the healthcare system.
  - Recognize how types of medical practice (HMO, Medicare, Medicaid, VA) and delivery systems differ from one another.
  - Where appropriate, utilize the individual delivery systems to help improve healthcare of your patients (use healthcare case managers, non-physician providers to assess, coordinate, and improve health care).
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