**Master Diagnosticians: A Mini-Elective in Clinical Reasoning**

**Mini-Elective**

**Spring 2010**

**Course Dates:** February 22, March 1, 8, 15, 22, 29*
Mondays, 4:30—6:00 PM (except March 29)

**Maximum Students:** 15

**Class Year:** MS2

**Course Director:** Thuy Bui, MD
Melissa McNeil, MD

**Contact Information:**
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**Description:**
The ability to diagnose effectively and accurately requires integrating knowledge base with clinical reasoning skills to solve medical problems. This six-session mini-elective will introduce students to principles that underlie the clinical thinking of physicians and allow each student to develop the skills to become expert diagnosticians through problem- and case-based techniques using clinical vignettes. Students will learn to describe case concisely and to use medical terms to show that they understand how the patient’s words translate into accepted medical equivalents thereby linking the case to their formal knowledge. Each session will be composed of a brief formal lecture followed by individual and collaborative clinical reasoning exercises and presentation of unknown cases to seasoned clinicians. The theater-style think-aloud and reflective role play by faculty will model the complexity of the clinical reasoning process which requires both formal and experiential knowledge.

**Objectives:**
- Examine modalities of logic and inference used by physicians
- Describe the types of errors in clinical reasoning that contribute to poor diagnostic performance
- Define the stage of the clinical reasoning process from data acquisition, problem recognition to interpretation or hypothesis generation
- Integrate information from a clinical encounter to achieve a working diagnosis and differential diagnoses
- Employ a highly efficient search for additional data to rule in or out alternative diagnoses
- Recognize that there is a variety of reasoning strategies and pathways to tailor to the complexity of each clinical problem
- Interpret physical exam findings using likelihood ratios
- Apply a Bayesian approach to diagnosis and probabilistic reasoning in clinical decision making
- Utilize information from self-directed learning to select cost-effective diagnostic tests to identify common diagnoses

**Requirements:**
- Active participation in all sessions.
• Reading assignments

Course Outline

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Course Director:
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Faculty:
Melissa McNeil, MD, MPH
Thuy Bui, MD
Mehul Tejani, MD, MPH

Location:
All sessions
Scaife Hall, Rooms, 460 A&B

Course Outline: Further information pending

Session one: Principles of clinical diagnostic reasoning—theory, research, implications or models of expertise development
READING: TBD
CASE: common multi-organ problems and illnesses (simultaneous complaints)

Session two: Heuristics and cognitive shortcuts
READING: TBD
CASE: illustrating diagnostic pitfalls

Session three: Search-and-scan vs. scheme-driven forms of inquiry
READING: TBD
CASE: a patient with an acute rise in serum creatinine (Mandin, 1997)

Session four: the rational physical exam
READING: TBD
CASE: pretest disease risk and posttest probability of disease; interpreting physical findings using likelihood ratios,

Session five: Integrate communication and clinical reasoning
READING: TBD
CASE: highlighting biomedical and psychosocial aspects of patient care; shared decision-making

Session six: Oral case presentations
READING: TBD
CASE: adapt the standard case presentations to the outpatient, consultation and ICUs

Resources:
TBA