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Master Diagnosticians: A Mini-Elective in Clinical Reasoning Mini-Elective Spring 2021

<u>Course Dates:</u>	January 8, 15, 22, 29, February 5, 12 Fridays, 1:00-3:00 PM
<u>Maximum Students:</u>	25
<u>Class Year:</u>	MS2
<u>Course Director:</u>	Thuy Bui, MD Melissa McNeil, MD
<u>Contact Information:</u>	Thuy Bui, MD 412-692-4840 buit@upmc.edu Melissa McNeil, MD mneilma@upmc.edu 412-692-4821
<u>Registration:</u>	Denise Downs, Office of Medical Education ddowns@medschool.pitt.edu

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 becoming 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
- Describes 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 Directors:

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Faculty:

Melissa McNeil, MD, MPH
Thuy Bui, MD
Eliana Bonifacino, MD

Location:

All sessions
Remote Via Zoom or Teams: TBA
1:00-3:00 pm

TENTATIVE SCHEDULE:

Session one: January 8, 2021

Introduction to Diagnostic Clinical Reasoning

READING: Bowen J. Educational Strategies to Promote Clinical Diagnostic Reasoning. *NEJM* 2006;355:2217-25

Elstein AS, Schwarz A. Clinical problem solving and diagnostic decision making: selective review of the cognitive literature. *BMJ* 2002;324:729-32

Session two: January 15, 2021

Identify Key Clinical Features and Summary Statements

Session three: January 22, 2021

Problem List and Prioritizing It

READING: Mandin H. et al. Helping Students Learn to Think Like Experts When Solving Clinical Problems. *Academic Medicine* 1997;72:173-179.

Session four: January 29, 2021

Differential Diagnosis Formulation

Session five: February 5, 2021

Integrate Communication and Clinical Reasoning

Session six: February 12, 2021

Cognitive Errors—Heuristics

READING: Redelmeier DA. The Cognitive Psychology of Missed Diagnosis. *Ann Intern Med* 2005;142:115-120

RESOURCES:

- Kassirer J, Wong J, Kopelman R. *Learning Clinical Reasoning*. 2nd ed. Baltimore: Lippincott Williams & Wilkins, 2001
- Groopman J. *How Doctors Think*. New York: Houghton Mifflin Company, 2007
- Facione N, Facione P. *Critical Thinking and Clinical Reasoning in the Health Sciences*. The California Academic Press, 2008