

R1 class (two 2-hour sessions):

Exercise 1: Formulating a searchable question

Take a recent clinical question from one of your patients (or use one from the list provided) and restate it in “PICO” format. (Patient problem, Intervention, Comparison, Outcomes)

Exercise 2: Identifying the best type of study to answer your clinical question

See attached Table “**Oxford Centre for Evidence-based Medicine 2011 Levels of Evidence**” outlining hierarchy of evidence quality/Steps for different types of clinical questions.

Examine your clinical question. What category of question is it asking? (Example: “Does this intervention help?”). What type of research study would supply the best quality (Step 1) evidence to answer it? Use the **Table** to decide.

Exercise 3: Study design and best uses for common types of research studies

(Residents work in pairs) Choose 2 or 3 papers from amongst the example publications (below).

- Read the “abstract” and the “methods” section for each. Describe in plain English: what type of study is it? (“study design”) (PMID# 23744347, 16567607, 23281858, 21247662, 21954895, 21462100, 17034523, 12591038, 20603258, 12390062, 22210512, 17039503, 7515659, 2806440)

- Describe the outcome of each study in plain language. If necessary, work backwards from the study to construct a “clinical question” for each study. Is it the optimal type of study to answer your clinical question? For example, for the first study a clinical question might be: “My brother-in-law’s doctor gave him naltrexone to help him quit smoking. Can I have that too?”

- Find and define any EBM terms in the “results” section, translating them into clear non-medical language. Examples of common EBM terms: “95% Confidence Interval”, “number needed to treat”, “ARR” (absolute risk reduction), “RRR” (relative risk reduction), NNT vs. NNH, PPV and NPV, Odds vs Incidence, LR+/-, RR vs. OR vs. HR, P value vs CI

Exercise 4: Guideline design and appraisal

- Working in pairs, select one of four guidelines (PSA: AUA site plus PMID# 23567643, 22801674, 25349003). Evaluate using the 10 questions from the attached “**Journal Club Worksheet for Practice Guidelines**”.

- Each R1 pair, discuss your guideline. How transparent was the quality of evidence? Was there potential for bias? Any other aspects from the worksheet?

Exercise 5: Finding and comparing guidelines

- Working in pairs, find two other guidelines that address a different topic (for example: hepatitis C screening, lung cancer screening, Pap testing, mammography). Search using the filters in the “Guideline Clearinghouse”. Analyze and compare the two guidelines. Are they different? How can you reconcile the differences (use the worksheet)?

-Talking with patients in clear non-medical language: Each R1 pair (acting as “physician”) and discuss with the “patient” (faculty) why following one guideline is a better choice for them (take the patient’s values into account in your choice and explanation). Use the information you found by working through the guideline worksheet.

R2 class (one 2-hour session):

Exercise 1: What to search for? What research study design is likely to supply the best answer to your clinical question?

-Examine your clinical question (from one of your patients or from the list provided). If necessary, convert into PICO format (Population, Intervention, Comparator, Outcome). Refer to the attached table: “**Oxford Centre for Evidence-based Medicine 2011 Levels of Evidence**”.

-What kind of question is it? (Many of our clinical questions are of the kind: “Does this intervention help?”) What type of study would supply the highest quality of evidence (Step 1 evidence) to answer the question? Search for Step 1 studies using online “evidence-rated” resources on UW Care Provider Toolkit (Trip, Clinical Key, Bandolier, BMJ Clinical Evidence)

-If there aren’t any published Step 1 studies that address your question, what type of study would be Step 2? or Step 3? or lower quality? Search for studies with the highest quality research design available (search for Step 2 studies if there are no Step 1 studies). What studies would we use if there are both Step 1 studies and Step 2 studies?

-How does the research study design (level of evidence) alter how strongly we would recommend a specific treatment?

-Translate the concept of “level of evidence” into clear non-medical language that your patients would understand.

Exercise 2: Choosing the most relevant evidence. What evidence applies best to your clinical question?

-Refer to your clinical question. What specific patient population does it refer to? How well do the studied populations in the articles that you found in your search match the population in your clinical question? What if there are no studies that evaluated that population specifically? How might that affect the strength of our recommendations for a specific treatment?

-Translate the concept of “relevance” into clear non-medical language that your patients would understand.

Exercise 3: Choosing the best quality of evidence. Which particular studies should weigh the most in answering your clinical question?

-Refer again to your clinical question and the articles you found in our evidence search. Discuss what attributes of a particular study affect its quality? (population size, transparency of methodology, funding sources, appropriateness of statistical analysis, etc.)

--Translate the concept of “evidence quality” into clear non-medical language that your patients would understand.

Exercise 4: Responding professionally to patient questions. How to welcome questions and follow-up with research and careful appraisal. Communicating your findings with the patient (at a later visit).

- Immediate response to the patient with a question. Patients commonly bring in or ask about news reports, headlines, magazine articles, reports of articles that friends or families have recommended to them. How might you respond if a patient brings in an article (for example: magazine article headline

“Treat your diabetes with turmeric!”, or news report “Controlling blood pressure to 120/80 saves lives!”) Practice some scripts you could use with a patient.
(consider validation and exploration)

Exercise 5: Appraisal of the evidence behind the headlines

-Either generate, or use provided examples, of “headline articles”. Find the original research that they were based on. What was the implied patient clinical question? Translate into PICO format. What is the research study design (methodology) of the original article?

What level (Step) of evidence does that design provide for answering the clinical question?

How relevant is the original article to your particular patient?

How good (quality) is the original article? (Evaluate using the attributes above)

-Communicating the results of your investigation with your patient. Discuss what you have learned about the “headline article” in clear non-medical language. Address level of evidence (study design), relevance, and quality.

R3 class (two 2-hour sessions):

Session one: Basics of informed search strategies in UW online library resources, with medical librarian Sarah Safranek, MLIS

Where to search in UW online library resources

Background questions (general clinical questions regarding a topic such as what is the disorder? What causes it? How does it present? What are some treatment options? Answers typically found in textbooks or review articles)

Exercise 1: Using online “textbook” resources on UW Care Provider Toolkit

Search for background information on the topic (“antibiotic treatment for severe pancreatitis”) within UpToDate, DynaMed, Sanford Guide –web edition.

Next search for background information on “black cohosh for hot flash treatment in breast cancer survivors” within UpToDate, DynaMed, Natural Medicines.

Discuss: How easy is it to find the information that addresses your question? How explicitly do the authors describe the quality of evidence supporting treatment recommendations?

Foreground questions (specific questions regarding a specific patient. Answers typically found in original research articles; and secondary sources such as systematic reviews of individual studies)

Exercise 2: Using online “evidence-rated” resources on UW Care Provider Toolkit (Trip, Clinical Key, Bandalier, BMJ Clinical Evidence)

Use self-generated questions or those on list provided

How to search: finding the best evidence on specific topics (not in evidence databases)

Exercise 1: searching PubMed Clinical Queries filter to find specific study types Use the questions either generated by the group or those provided. Search PubMed for “Step one” studies that are relevant to the patient population, using the Clinical Queries filter.

Exercise 2: translating the evidence into plain language for your patient:

Practice translating the results of the evidence that you found. Address the concepts of “level of evidence” and “relevance” in plain language that your patients would understand.

Session two: Weighing and synthesizing evidence

Exercise 1: analyzing and summarizing a mass of data (the results of a literature search)

-Working in pairs, review the results of the evidence searches for either of two topics (PMID# LARC in teens 26839116, 25271604, 22631865. Or Gaba/Venlafaxine for PTSD PMID# 11145492, 17227907, 16143229, 16139656, 21060031). Describe each article in terms of research type, relevance, quality. Summarize the outcomes

Exercise 2: synthesizing data and communicating with patients

-Working in pairs, synthesize the evidence you summarized above. Rank the individual studies in order of their relative merits.

-Communication with patients. Each pair, translate the synthesized evidence into clear, non-medical language that you patient would understand. Answer the clinical question with the evidence, describe how you evaluated the evidence and how well it applies to them. What does the evidence say about the proposed treatment? (For example, how well might venlafaxine treat nightmares if your patient had PTSD?)