EBM Thread Topics with Objectives
4/13/15

1. Assess personal information needs
   a. Recognize knowledge gaps
      i. Identify knowledge needs for care of a patient.
      ii. Describe the importance of meeting knowledge needs.
   b. Prioritize knowledge gaps
      i. Prioritize most important knowledge needs for care of a patient
2. Ask answerable clinical question
   a. Categories of questions
      i. Background
         1. Differentiate between “Background” and “Foreground” questions.
         2. Compose background questions from a clinical case/scenario
      ii. Foreground (Treatment, Prevention, Diagnosis, Prognosis, Risk/Harm)
         1. Identify and describe the different types of foreground questions.
         2. Distinguish which type of foreground question will answer a given knowledge need.
         3. Compose foreground questions of each type from clinical cases/scenarios.
   b. Question format – PICO (Patient, Intervention, Comparison, Outcome) for foreground questions
      i. Define PICO components
      ii. Describe importance of using PICO format
      iii. Formulate PICO questions for different foreground question types from clinical case/scenarios
3. Find appropriate evidence
   a. Study Types (Systematic Review, Randomized controlled Trial, Cohort Study, Case-control Study)
      i. Distinguish experimental versus observational studies.
      ii. Identify and describe the different study types
      iii. Describe which study types best address which foreground question types
      iv. Determine which study type would be most appropriate for a foreground question developed from a clinical case/scenario.
   b. Evidence resources (Haynes Model)
      i. Single Studies (primary evidence)
         1. Identify and describe primary evidence resources available at UW
      ii. Synopses of studies (preappraised)
         1. Identify and describe preappraised evidence resources available at UW
      iii. Syntheses (systematic reviews)
         1. Identify and describe synthesis resources available at UW
      iv. Synopses of syntheses (preappraised systematic reviews)
         1. Identify and describe synopses of synthesis resources available at UW
      v. Summaries (clinical guidelines, evidence-based texts)
         1. Identify and describe summary resources available at UW
      vi. Systems (Integrated clinical decision support)
         1. Describe the clinical decision support that is integrated into HealthLink
         2. Use HealthLink clinical decision support during patient care.
c. Choosing appropriate resource for question and setting
   i. Describe which evidence resources are most likely to contain the best evidence for different question types including background and foreground
   ii. Compare advantages and disadvantages of different evidence resources for a given clinical question.
   iii. Choose best evidence resource for clinical case/scenario.

d. Search skills in multiple resources
   i. Describe how the search engine functions for common evidence resources
   ii. Describe search filters in PubMed
   iii. Describe how to choose appropriate search terms for different resources – narrow versus broad
   iv. Efficiently search multiple evidence resources for evidence to answer clinical questions.
   v. Apply methods of limiting searches in multiple resources to narrow search to a reasonable number of results

4. Appraise evidence
   a. Risk of Bias
      i. Evidence resources
         1. Describe potential bias in synopses and summary resources
         2. Assess risk of bias of evidence retrieved from synopsis or summary resource
      ii. Study types
         1. Identify available critical appraisal tools for different study types
         2. Choose correct critical appraisal tool based on study type
         3. Assess risk of bias for individual study (therapy, diagnosis, prognosis, harm, systematic review) using critical appraisal tool.
      iii. Guidelines
         1. Explain how guidelines are of variable quality
         2. Identify guideline development techniques to limit bias

5. Interpret Results of studies
   a. Magnitude of results
      i. Absolute results (ARR, NNT)
         1. Compare absolute versus relative results of a study
         2. Define ARR and NNT
         3. Calculate ARR and NNT for therapy or harm study
         4. Interpret ARR and NNT for therapy or harm study as they relate to expected outcome of clinical case/scenario
      ii. Relative results (OR, RR, RRR)
         1. Define OR, RR, RRR
         2. Calculate RR and RRR for a therapy or harm study
         3. Interpret OR, RR and RRR as they relate to the expected outcome or risk of a clinical case/ scenario.
      iii. Graphical results
         1. Interpret Kaplan-Meier curve
         2. Interpret Forest plot for a meta-analysis
      iv. Diagnosis
         1. Describe benefit of likelihood ratio compared to sensitivity and specificity
2. Identify likelihood ratio nomogram or calculator
3. Calculate patients post-test probability of disease based on likelihood ratio and pre-test probability.

b. Precision of effect
   i. Confidence intervals
      1. Describe how confidence intervals show range of potential results in a population
      2. Analyze confidence intervals from a study.
      3. Use confidence intervals in applying results to a clinical case/scenario

6. Apply evidence to patient care
   i. Formulate treatment plan for a real patient based on evidence interpretation and patient circumstances and preferences

b. Benefit versus harm
   i. Identify need to evaluate both benefits and harms of an intervention
   ii. Determine expected benefits and harms of an intervention for a clinical case/scenario

c. Applicability to individual patient
   i. Patient circumstances
      1. Identify factors involved in determining patient circumstances.
      2. Evaluate patient circumstances for clinical cases.
   ii. Patient preferences
      1. Explain the importance of patient preferences
      2. Identify methods of determining patient preferences
      3. Apply techniques for determining patient preferences to real patients.
   iii. Shared decision making
      1. Describe shared decision making process

d. Applicability to patient population
   i. Identify criteria for guiding what populations study results can be applied to.
   ii. Appropriately apply study results to a clinical case/scenario