**Journal Club Guidelines**

In order to assure that our journal club consistently emphasizes Evidence Based Medicine (EBM), the Education Committee decided to adopt the “EBM Toolkit” developed by University of Alberta [http://www.ebm.med.ualberta.ca/ebm.html](http://www.ebm.med.ualberta.ca/ebm.html). Please use these guidelines:

1. **Pick a topic**
   a. Select a topic that is pertinent to the global practice of anesthesiology.
   b. Select a narrow topic to efficaciously search for articles (i.e. a broad topic will lead to too many articles to review for a presentation).

2. **Get approval of the topic** (This step assures that a topic is not presented more than once every two years.)
   a. Email the chosen topic to Dr. Hong (chong@som.umaryland.edu) for approval prior to researching too many articles. This needs to be done at least 1 month before the date of presentation.
   b. If the faculty moderator has not already been involved, this should be done as soon as the topic has been approved by Dr. Hong.
   c. Make every effort to present a “pro” and “con” paper on the approved topic.

3. **Resources to select the articles**
   a. Pub med; Medline
   b. Library assistant
   c. Moderator assigned to the journal club

4. **In order to critically evaluate the articles for presentation**, use the *Evidence based medicine toolkit/University of Alberta* [http://www.ebm.med.ualberta.ca/ebm.html](http://www.ebm.med.ualberta.ca/ebm.html). A word version of the different toolkits is included in this document.
   a. Choose the toolkit appropriate for the type of article presented:
      i. Diagnosis
      ii. Prognosis
      iii. Harm/Etiology
      iv. Therapy/prevention
      v. Practice guidelines
      vi. Systematic review
      vii. Economic analysis

5. **Using the appropriate toolkit**, answer the following questions:
   a. Are the results of the study valid?
   b. What were the results?
   c. Will the results help me in caring for my patients?
Worksheet for Using an Article about Assessing Diagnostic Tests

University of Alberta EBM Toolkit

CITATION:

ARE THE RESULTS OF THE STUDY VALID?

1. Was there an independent, blind comparison with a reference standard?
   [ ] Yes  [ ] No  [ ] Can't Tell
   - Is reference standard used acceptable?
   - Were both reference standard and test applied to all patients?

2. Did the patient sample include an appropriate spectrum of patients to whom the diagnostic test will be applied in clinical practice?
   [ ] Yes  [ ] No  [ ] Can't Tell

3. Did the results of the test being evaluated influence the decision to perform the reference standard?
   [ ] Yes  [ ] No  [ ] Can't Tell
   - "Verification" or "work-up" bias?

4. Were the methods for performing the test described in sufficient detail to permit replication?
   [ ] Yes  [ ] No  [ ] Can't Tell
   - Preparation of patient?
   - Performance of test?
   - Analysis and interpretation of results?

5. Overall, are the results of the study valid?
   [ ] Yes  [ ] No  [ ] Can't Tell
WHAT WERE THE RESULTS?

1. Are likelihood ratios for the test results presented or data necessary for their calculation provided?
   [ ] Yes   [ ] No   [ ] Can't Tell

   • How big or small is this LR?

WILL THE RESULTS HELP ME IN CARING FOR MY PATIENTS?

1. Will the reproducibility of the test result and its interpretation be satisfactory in my setting?
   [ ] Yes   [ ] No   [ ] Can't Tell

2. Are the results applicable to my patient?
   [ ] Yes   [ ] No   [ ] Can't Tell

   • Similar distribution of disease severity?
   • Similar distribution of competing diseases?
   • Compelling reasons why the results should not be applied?

3. Will the results change my management?
   [ ] Yes   [ ] No   [ ] Can't Tell

   • Test and treatment thresholds?
   • High or low LR’s?

4. Will patients be better off as a result of the test?
   [ ] Yes   [ ] No   [ ] Can't Tell

   • Is target disorder dangerous if left undiagnosed?
   • Is test risk acceptable?
   • Does effective treatment exist?
   • Information from test will lead to change of Management beneficial to patient?
Worksheet for Using an Article about Prognosis

University of Alberta EBM Toolkit

CITATION:

ARE THE RESULTS OF THE STUDY VALID?

1. Was there a representative and well-defined sample of patients at a similar point in the course of the disease?
   - [ ] Yes
   - [ ] No
   - [ ] Can't Tell
   - Inclusion and exclusion criteria?
   - Selection biases?
   - Stage of disease?

2. Was follow-up sufficiently long and complete?
   - [ ] Yes
   - [ ] No
   - [ ] Can't Tell
   - Reasons for incomplete follow-up?
   - Prognostic factors similar for patients lost- and not lost-to-follow-up?

3. Were objective and unbiased outcome criteria used?
   - [ ] Yes
   - [ ] No
   - [ ] Can't Tell
   - Outcomes defined at start of study?
   - Investigators blind to prognostic factors?

4. Was there adjustment for important prognostic factors?
   - [ ] Yes
   - [ ] No
   - [ ] Can't Tell

5. Overall, are the results of the study valid?
   - [ ] Yes
   - [ ] No
   - [ ] Can't Tell
WHAT WERE THE RESULTS?

1. How large is the likelihood of the outcome event(s) in a specified period of time
   [ ] Yes          [ ] No          [ ] Can't Tell
   • Survival curves?

2. How precise was the estimate of the treatment effect?
   [ ] Yes          [ ] No          [ ] Can't Tell
   • Confidence intervals?

WILL THE RESULTS HELP ME IN CARING FOR MY PATIENTS?

1. Were the study patients similar to my own?
   [ ] Yes          [ ] No          [ ] Can't Tell
   • Patients similar for demographics, severity, co-morbidity and other prognostic factors?
   • Compelling reason why the results should not be applied?

2. Will the results lead directly to selecting or avoiding therapy?
   [ ] Yes          [ ] No          [ ] Can't Tell

3. Are the results useful for reassuring or counseling patients?
   [ ] Yes          [ ] No          [ ] Can't Tell
Worksheet for Using an Article about Causation of Harm

University of Alberta EBM Toolkit

CITATION:

ARE THE RESULTS OF THE STUDY VALID?

1. Were there clearly identified comparison groups that were similar with respect to important determinants of outcome, other than the one of interest?
   [ ] Yes            [ ] No            [ ] Can't Tell
   - RCT, cohort, base-control?
   - Other known prognosis factors similar or adjusted for?

2. Were the outcomes and exposures measured in the same way in the groups being compared?
   [ ] Yes            [ ] No            [ ] Can't Tell
   - Recall bias? Interviewer bias?
   - Exposure opportunity similar?

3. Was follow-up sufficiently long and complete?
   [ ] Yes            [ ] No            [ ] Can't Tell
   - Reasons for incomplete follow-up?
   - Risk factors similar in those lost and not lost to follow-up?

4. Is the temporal relationship correct?
   [ ] Yes            [ ] No            [ ] Can't Tell
   - Exposure preceded outcome?

5. Is there a dose-response gradient?
   [ ] Yes            [ ] No            [ ] Can't Tell
• Risk of outcome increases with quantity or duration of exposure?

WHAT WERE THE RESULTS?

1. How strong is the association between exposure and outcome?
   [ ] Yes            [ ] No            [ ] Can't Tell

• RR's or OR's?

2. How precise is the estimate of risk?

• Confidence intervals?

WILL THE RESULTS HELP ME IN CARING FOR MY PATIENTS?

1. Are the results applicable to my practice?
   [ ] Yes            [ ] No            [ ] Can't Tell

• Patients similar for demographics, morbidity and other prognostic factors?
• Are treatments and exposures similar?

2. What is the magnitude of the risk?

   [ ] Yes            [ ] No            [ ] Can't Tell

• Absolute risk increase (and its reciprocal)?

3. Should I attempt to stop the exposure?

   [ ] Yes            [ ] No            [ ] Can't Tell

• Strength of evidence?
• Magnitude of risk?
• Adverse effects of reducing exposure?
Worksheet for Using an Article about Therapy or Prevention

University of Alberta EBM Toolkit

CITATION:

ARE THE RESULTS OF THE STUDY VALID?

1. Was the assignment of patients to treatment randomized?
   [ ] Yes            [ ] No            [ ] Can't Tell

2. Were all patients who entered the trial properly accounted for and attributed at its conclusion?
   [ ] Yes            [ ] No            [ ] Can't Tell
   • Was follow-up complete?
   • Were patients analyzed in the groups to which they were randomized (intention to treat analysis)?

3. Were patients, their clinicians, and study personnel 'blind' to treatment?
   [ ] Yes            [ ] No            [ ] Can't Tell

4. Were the groups similar at the start of the trial?
   [ ] Yes            [ ] No            [ ] Can't Tell
   • Baseline prognostic factors (demographics, co-morbidity, disease severity, other known confounders) balanced?
   • If different, were these adjusted for?

5. Aside from the experimental intervention, were the groups treated equally?
   [ ] Yes            [ ] No            [ ] Can't Tell
   • Co-intervention?
   • Contamination?
   • Compliance?
WHAT WERE THE RESULTS?

1. How large was the treatment effect?
   - [ ] Yes            [ ] No            [ ] Can't Tell

   - Absolute risk reduction?
   - Relative risk reduction?

2. How precise was the estimate of the treatment effect?
   - Confidence intervals?

WILL THE RESULTS HELP ME IN CARING FOR MY PATIENTS?

1. Can the results be applied to my patient care?
   - [ ] Yes            [ ] No            [ ] Can't Tell

   - Patients similar for demographics, severity, co-morbidity and other prognostic factors?
   - Compelling reason why the results should not be applied?

2. Were all clinically important outcomes considered?
   - [ ] Yes            [ ] No            [ ] Can't Tell

   - Are substitute endpoints valid?

3. Are the likely treatment benefits worth the potential harms and costs?
   - [ ] Yes            [ ] No            [ ] Can't Tell

   - NNT for different outcomes?
Worksheet for Using Practice Guidelines

University of Alberta EBM Toolkit

CITATION:

ARE THE RECOMMENDATIONS VALID?

1. Were all important options and outcomes clearly specified?
   [ ] Yes  [ ] No  [ ] Can't Tell

2. Was an explicit and sensible process used to identify, select, and combine evidence?
   [ ] Yes  [ ] No  [ ] Can't Tell

3. Was an explicit and sensible process used to consider the relative value of different outcomes?
   [ ] Yes  [ ] No  [ ] Can't Tell

4. Is the guideline likely to account for important recent developments?
   [ ] Yes  [ ] No  [ ] Can't Tell

5. Has the guideline been subject to peer review and testing?
   [ ] Yes  [ ] No  [ ] Can't Tell

6. Overall, is the guideline valid?
   [ ] Yes  [ ] No  [ ] Can't Tell
WHAT ARE THE RECOMMENDATIONS?

1. Are practical, clinically important, recommendations made?

   [ ] Yes      [ ] No      [ ] Can't Tell

2. How strong are the recommendations?

3. What is the impact of uncertainty associated with the evidence and values used in the guidelines?

WILL THE RECOMMENDATIONS HELP YOU IN CARING FOR PATIENTS?

1. Is the primary objective of the guideline consistent with your objective?

   [ ] Yes      [ ] No      [ ] Can't Tell

2. Are the recommendations applicable to your patients?

   [ ] Yes      [ ] No      [ ] Can't Tell
Worksheet for Using a Systematic Review about Therapy

University of Alberta EBM Toolkit

CITATION:

ARE THE RESULTS OF THE STUDY VALID?*
* Note that these validity criteria can be applied to systematic reviews in any domain (Therapy, Diagnosis, Harm, and Prognosis)

1. Did the overview address a focused clinical question?
   [ ] Yes [ ] No [ ] Can't Tell
   • Patients? Exposures? Outcomes?
   • Therapy? Causation? Diagnosis? Prognosis?

2. Were the criteria used to select articles for inclusion appropriate?
   [ ] Yes [ ] No [ ] Can't Tell

3. Is it unlikely that important, relevant studies were missed?
   [ ] Yes [ ] No [ ] Can't Tell
   • Bibliographic databases?
   • Reference lists?
   • Personal contacts?

4. Was the validity of the included studies appraised?
   [ ] Yes [ ] No [ ] Can't Tell
   • Validity criteria?

5. Were assessments of studies reproducible?
   [ ] Yes [ ] No [ ] Can't Tell
   • Blinded reviewers?
• Inter-observer agreement?

6. Were the results similar from study to study?

• Tests of homogeneity?

WHAT WERE THE RESULTS?*
*Note that these questions apply ONLY to systematic reviews of therapy

1. What are the overall results of the review?

• Overall ORs, RRs?
• Weighing of studies?

2. How precise were the results?

• Confidence intervals?

WILL THE RESULTS HELP ME IN CARING FOR MY PATIENTS?*
*Note that these questions apply ONLY to systematic reviews of therapy

1. Can the results be applied to my patient care?
   
   [ ] Yes  [ ] No  [ ] Can't Tell
   
   • Patients similar for demographics, severity, co-morbidity and other prognostic factors?
   • Compelling reason why the results should not be applied?

2. Were all clinically important outcomes considered?
   
   [ ] Yes  [ ] No  [ ] Can't Tell
   
   • Are substitute endpoints valid?

3. Are the likely treatment benefits worth the potential harms and costs?
   
   [ ] Yes  [ ] No  [ ] Can't Tell
   
   • NNT for different outcomes?
Worksheet for Using an Article about an Economic Analysis

University of Alberta EBM Toolkit

CITATION:

ARE THE RESULTS OF THE STUDY VALID?

1. Did the analysis provide a full economic comparison of health care strategies?
   [ ] Yes            [ ] No            [ ] Can't Tell
   - Costs and outcomes for each strategy?
   - Whose viewpoint?
   - Cost-effectiveness/benefit/utility study?

2. Were the costs and outcomes properly measured and valued?
   [ ] Yes            [ ] No            [ ] Can't Tell
   - Clinical effectiveness established?
   - Costs measured accurately?
   - Data on costs and outcomes appropriately integrated?

3. Was appropriate allowance made for uncertainties in the analysis?
   [ ] Yes            [ ] No            [ ] Can't Tell
   - Sensitivity analysis?
   - Statistical significance?

4. Are estimates of costs and outcomes related to the baseline risk in the treatment population?
   [ ] Yes            [ ] No            [ ] Can't Tell
   - Sub-group analyses by risk?

WHAT WERE THE RESULTS?
1. What were the incremental costs and outcomes of each strategy?

2. Do incremental costs and outcomes differ between sub-groups?
   [ ] Yes  [ ] No  [ ] Can't Tell

3. How much does allowance for uncertainty change the results?
WILL THE RESULTS HELP ME IN CARING FOR MY PATIENTS?

5. Are the treatment benefits worth the harms and costs?

[ ] Yes  [ ] No  [ ] Can't Tell

- Strong dominance?
- Weak dominance?
- Non-dominance?
- Incremental cost-effectiveness?

6. Could my patients expect similar health outcomes?

[ ] Yes  [ ] No  [ ] Can't Tell

- Study patients similar to my patients?
- Study clinical management similar to my local practice?

7. Could I expect similar costs?

[ ] Yes  [ ] No  [ ] Can't Tell

- Study/local resource consumption similar?
- Study/local prices similar?