**Yearly EBM and Journal Club Initiative TODO List**

updated 6/8/2020 BL

**Fall:**

* Update PPT, Pre-test questions, and Resource List. Upload them to MedHub (via Amy / Emilee) and Pulse
* ~~give EBM seminar over 5 weeks. This will be early in the year, as the goal of the seminar is meant to teach a background level of familiarity with clinical epidemiology, stats, and EBM to allow participation in journal club.~~ This year, Rick Rose is doing EBM introductory critical appraisal material in chunks of 45 minutes during the journal club timeslot. He will do this for 3 successive cohorts of +1 groups (=15 weeks)
* Provide feedback (and consider attending some) initial Journal Clubs. These are ran by whoever is the ACVA chief. In particular, critiquing the patient scenario and choice of article/CPG is helpful. There are ‘How-to’ documents for setting up the journal clubs at: <https://pulse.utah.edu/site/internal-medicine/residencyfiles/Residency/Ambulatory%20Care-%20AC-VA%2C%20Seminar%2C%20Lectures/ACVA%20Journal%20club/Outpatient%20Journal%20Club%20Docs>
* Consider having the program purchase as content references- <https://smile.amazon.com/Guide-Statistics-Methods-Edward-Livingston-dp-1260455327/dp/1260455327/> and <https://smile.amazon.com/Users-Guides-Medical-Literature-Evidence-Based-dp-0071794158/dp/0071794158>.

**Yearlong:**

* Journal Club: there are study designs (e.g. clinical decision rule, cross-sectional study) that don’t have critical appraisal templates or facilitator’s guide – when a topic is chosen that involves a study that doesn’t have these created, you’ll have to make them (there’s a how-to at <https://pulse.utah.edu/site/internal-medicine/residencyfiles/Residency/Ambulatory%20Care-%20AC-VA%2C%20Seminar%2C%20Lectures/ACVA%20Journal%20club/Outpatient%20Journal%20Club%20Docs> )
* Solicit feedback about which content is coming up in Journal Club that residents are unclear about – these might be useful additions to the EBM seminar.
* Update the Journal club How-To documents and this document.

**Curriculum Objectives**:

**Seminar: Note – splitting with Rick Rose this year**

* Be set up to access several useful secondary literature sources through the Eccles Library / University Network by the end of the seminar. Additionally, be aware of several useful sources of medical literature synopses to stay up to date with literature.
* Understand the relationship between effect size, sample size, and type 1 and 2 error in a study
* Name 3 types of threats to internal validity and identify if they are likely to be present in a given study design
* Identify common barriers to external validity (aka generalizability) to patients commonly seen.
* Explain how clinical practice guidelines differ from meta-analyses; be able to give examples for when recommendations may be sensitive to individual preferences.
* Be able to informally state Bayes theorem, and know how it relates to test characteristics and the usefulness of clinical testing
* Be able to communicate the relationship between baseline risk, relative risk reduction, absolute risk reduction. Understand which end-points are surrogate end-points. Be able to communicate these issues to patients.

*Generally: the goal of the seminar is the present the introductory information that allows interns to participate in Journal Club.*

**Journal Club:**

*FOR LEARNERS: (*Time-frame = by participating in the curriculum throughout residency)

Knowledge, Skills: (based on 5As framework of EBM Skills)

1. *Goal: Increase learner knowledge of clinical epidemiology, study design, and biostatistics*

Objectives: Learner’s should be able to

a. understand the meaning and application of statistical concepts presented in primary studies (e.g. statistical significance vs clinical significance, intention-to-treat vs per protocol analysis, sensitivity analysis, absolute vs relative effect sizes)

b. explain why major methodological decision were made in a given study (e.g. advantages of case-control study vs cohort study vs randomized trial, usage of surrogate or composite end-points, the relationship between sample size, effect size, and power)

1. *Goal: Increase learner ability to critically appraise primary literature*

Objectives: Learners should be able to

a. determine whether a study’s methodology (study design, choice of outcomes, inclusion criteria, statistical analysis) is sufficient to answer a proposed question

b. identify common threats to validity in studies: bias, confounding, and chance.

c. summarize and communicate the magnitude of the effect found in a study, and assess the relevance to a proposed clinical question

1. *Goal: Effectively utilize synopses and clinical practice guidelines at the point of care and to improve practice patterns*

Objectives: Learners should be able to

a. distinguish and communicate the difference between strength of recommendation and strength of evidence supporting a recommendation.

b. assess common reasons why recommendations may be trustworthy or useful (or not).

c. identify recommendations that are particularly sensitive to a patient’s values and preferences OR individual clinical circumstances and develop skills to approach those clinical situations.

d. recognize problems that occur when CPGs are utilized for reasons other than individual patient care (health system costs, payor coverage, quality metrics, legal liability)

Beliefs/Attitudes:

*Goal: Increase interest in Clinical Epidemiology and Evidence-Based Clinical Practice and critical appraisal of medical literature.*

Objectives: Learners should

1. Establish self-efficacy and independence in the domain of EBM (e.g. learners should feel empowered to independently investigate clinical questions and determine the appropriate course of action independently)
2. Appreciate the relevance of critical appraisal of studies and guidelines to patient care (particularly as it pertains to staying current with changing medical evidence)
3. Acknowledge shortcomings in the current framework of knowledge generation (e.g. biomedical research) and dissemination (e.g. publication system, synthesis to guidelines by specialty organizations, and utilization by third parties to encourage specific practice patterns)

Behavior:

*Goal: Develop effective habits for staying up to date with new evidence and changing recommendations.*

Objectives: Learners should

1. participate in the sessions
2. read articles/CPG synopses ahead of time
3. improve the content (importance, relevance, variety) and efficiency (understanding, retention) of their medical reading
4. increase use of evidence-based resources at the point of care.
5. Improve their ability to adapt broad recommendations to individual patient circumstances on the wards or in clinic.

*GOALS/OBJECTIVES FOR FACILITATORS (VA Ambulatory Chief):*

Skills/Knowledge:

1. Sufficient comfort in biostatistical concepts and clinical epidemiology to lead discussion with aid of worksheets and facilitators guide

Attitude:

1. Model interest in EBM topics via engagement with content

Behavior:

1. Thorough review of content and methodology in subject of each 5 week block to provide insight to trainees (as measurable by number of residents who feel journal club is a good use of their time)
2. Subjects chosen to complement the other outpatient curriculum (e.g. not duplicating PEAC modules, but common outpatient issues, measurable by learners agreement that topics covered in journal club are relevant to patient care)
3. model an approach to learning medicine and keeping up to date that is able to be continued after training

**Longitudinal (Program-Wide) EBM Goals:**

*In addition to the goals above:*

* Leave residency with a good understanding of the major limitations of the medical literature (epistemology)
* Be able to distinguish reliable inferences based on new study findings from those likely to be spurious or misleading.
* Recognize areas of uncertainty in clinical practice
* Establish patterns of behavior that will allow graduates to stay current with the medical literature during their careers.

**Curricular Assessment:**

Seminar Assessment:

CURRICULAR ASSESSMENT

* Agree/Disagree: EBM is an important enough topic to warrant a Thursday seminar (Goal: Understand how and why EBM is useful to you as a trainee)
* (uncommon, common) I change practice in my proposed management plans because of evidence independent of a supervisor teaching or telling me to do so
* Agree/Disagree I have appraised (read, in depth & with the intent of assessing whether it provided reliable evidence) an article, outside of journal club, in the last year?
* Uncommon, common: teaching regarding how to use Clinical Practice Guidelines has influenced either a treatment decision or the way you counsel a patient about treatment options.
* Agree/Disagree: I found the EBM Seminar Tools list and setting up phone/laptop resources in person useful (GOAL: 7.Be able to access several useful secondary literature sources quickly, at the point of care. )
* Agree/Disagree: An understanding of Test Characteristics and Bayes theorem has helped me utilize tests at the point of care? Going forward in the residency (Assess this, vs the individual contribution of the seminar only) (GOAL: 5.Understand (in a non-mathy way) how Bayes Theorem can be applied to diagnosis)
* Agree/Disagree: The information covered on study designs, bias, confounding, chance provided a useful introduction to subsequently be emphasized in the Journal Club (Provided information helpful for participating in Journal Clubs) e.g. name 3 types of threats to internal validity and identify if they are likely to be present in a given study methodology, identify common barriers to external validity (aka generalizability) to patients commonly seen, “Outcomes?” - surrogates vs patient centered. Goal (4.Understand validity, and identify common threats to validity (Bias, Confounding, Chance))

(If you haven’t yet, consider filling out the Journal Club format feedback)

JC Assessment (Full assessment for all housestaff on Pulse)

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Q7 For the following goals, compare the outpatient journal club format prior to August 2019 (presentation of 2 individual articles) to the new journal club format (an article, a practice guideline, and a hypothetical case):

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| --- | --- | --- | --- | --- | --- |
|  | Strongly favors old format | Weakly favors old format | No difference | Weakly favors new format | Strongly favors new format |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 |

|  |  |
| --- | --- |
|  **Sessions help me appraise individual articles** *Example Objectives* *identify key components of a study's methodology such as end points, inclusion criteria, etc.* *assess possible effects of bias, confounding, chance on a study's results* () |  |
|  **Sessions help me interpret and apply clinical practice guidelines** *Example Objectives:*  *distinguish strength of recommendation from strength of evidence.*  *identify recommendations sensitive to patient preferences and values.* () |  |
|  **Sessions increase my comfort with statistics and methodology** *Example Objectives:* *understand the relationship of sample size, effect size, and power* *explain the benefits and drawbacks of discrete vs composite end-points or per-protocol vs intention-to-treat analysis* () |  |
|  **Sessions increase my interest in evidence-based medicine and critical appraisal of medical literature** *Example Objectives:* *empowered to investigate clinical questions and determine a course of action independently* *identify shortcomings in current structure of biomedical knowledge generation and dissemination* () |  |
|  **Sessions help me develop effective habits for staying current with new studies and recommendations** *Example objectives:* *sessions help me target my readings to the mst relavent and important source for a given question* *sessions help me assimilate to evidence into my practice pattern and apply guidelines to individual patient circumstances.* () |  |
|  **Sessions are enjoyable to participate in** () |  |
|  **Sessions are a valuable use of time** () |  |
|  **Overall assessment of the two formats** () |  |

**FUTURE DIRECTIONS:**

Background: 2019-2020 this was one, long 3-hour lecture that I didn’t have time to change before giving. It was suboptimal (Downside: too long, not interactive enough, not directive enough in goals). Thus, this new format is untested

Proposal:

Format: A pre-test (small groups, only formative of course) 5 smaller modules/activities: ~20 minutes each (15 minutes and an activity).

Note: this has not been road tested yet (changes were made primarily after the seminars – the Journal Club Re-design also occurred after the seminar finished… thus, these modifications have been undertaken to try to bring the seminar in-line with the other curriculum changes.

This is a running list of possible improvements to the program that might be helpful in the future:

[ ] in the Future, consider using the ACE tool or RESET (\*does not test acquisition) questionnaire (EBM skill assessments with some degree of validity, ?before and after) to measure EBM competence (more robust to assess knowledge/skills than attitude, which is what we’re currently assessing). Berlin Questionnaire would be another option.

 [ ] Engagement – perpetually difficult to the extent that the content feels divorced from clinical care… brainstorming ways to keep this even closer integrated to practice.