

**PUBH 752: Critical Appraisal of the Health Literature II**  
**Spring 2016**

**Mondays 1:25-2:15**  
**McGavran-Greenberg 2308**

**Instructors:**

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This is a 1-credit course that is meant to give the student further background in critical appraisal of the health literature. This semester concentrates on:

- (1) Reviewing the issue of how to appraise and interpret various types of randomized trials;
- (2) Interpreting one study in the context of other studies;
- (3) Synthesis designs such as systematic reviews, meta-analyses, guidelines, and decision analyses;
- (4) Introducing the student to different types of research.

The course will be taught primarily in a “journal club,” group discussion format.

Please check the course Sakai website for weekly reading assignments and further information about the course during the semester. It is absolutely essential that each week’s reading be done before class.

Among the goals of the course is for you to develop your eye for seeing potential biases and flaws (and positive aspects) in the study, assessing their importance, and improving your judgment at determining what true information can be extracted from the study. Critical appraisal is an important skill that requires (1) a thorough understanding of epidemiology and biostatistics; (2) the patience to read a study carefully, determining the degree to which its results are threatened by bias and/or random error; and (3) the judgment to extract the likely truth from the study (in the context of other evidence), the degree to which its results are not explained by bias and/or random error. Critical appraisal is not a simple exercise in classifying studies into either “right” or “wrong”.

The components of critical appraisal are: (**BAPAM**)

- (1) Understanding the question being addressed;
- (2) **B**: Assessment of potential bias (internal validity);
- (3) **A**: Assessment of appropriate analysis;
- (4) **P**: Assessment of power/precision;
- (5) **A**: Assessment of applicability (external validity);
- (6) **M**: Meaning - Interpretation of results, especially in view of other knowledge, other studies.

Each of these involves careful reading and analysis.

## **General Learning Objectives**

At the end of this course (two semesters), students should be able to:

1. Discuss the idea of critical appraisal;
2. Use critical appraisal in your Master's Paper;
3. Critically assess the magnitude and direction of systematic error (bias) and random error (precision) in individual studies in healthcare;
4. Extract from studies the (true) information content separate from the error;
5. Combine the information from several studies (and from other types of evidence) to gain the best current understanding of what the evidence says;
6. Wisely decide when it is appropriate to extrapolate beyond the evidence, or to generalize to external populations, to make appropriate decisions to improve the health of individuals and populations;
7. Make appropriate use of evidence together with other considerations in making optimal decisions to improve the health of individuals and populations.

## **Grades: (we expect everyone to do well)**

1. 50% of the grade is from in-class participation. [Note: evaluation of participation is not based entirely on the volume of comments made by a student. Excellent participation also involves the quality of comments, including their thoughtfulness and the degree to which they demonstrate that the student has not only done the expected reading but has also gone beyond this to read and think more deeply.]
2. 50% of the grade is from the final exam: a critical appraisal (take home) of a paper, completing the critical appraisal template and an additional 2 page written discussion (with references) of some methodologic issue illustrated by the paper. The issue can be either a positive or a negative part of the paper. A positive aspect increases our confidence in the results of the study; a negative aspect reduces our confidence.

To be considered for Honors, a student must attend regularly, participate at a level beyond that expected for all students, and write an outstanding final paper.