

Evidence Based Medicine Journal Club

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What is Evidence Based Medicine?

- Evidence based medicine is the judicious and conscientious use of best available current research evidence, integrated with experience of the physician and patient perspectives for clinical decision making.
- Patient preferences can be expressed values, revealed preferences(choices) or stated perspectives.
- The clinical decision can be for the choice of an intervention(prescribing a drug or a procedure or surgery) or going for a diagnostic investigation.
- Evidence based clinical practice and evidence informed policy are two identical concepts relevant in clinical medicine and public health practice.
- EBM is the application side of Clinical Epidemiology, like concept of health economics transformed in to health technology evaluation.

Why Evidence Based Medicine(EBM)?

- EBM Can be considered as a support tool for rational clinical practice and improved quality and efficiency of health care.
- EBM demystifies the medical myths of conventional medicine and hence the choice made by physician is more rational or objective & systematic, straightforward and can be made cost effective.
- EBM minimizes clinical practice variations and consequent cost inflations.

Evidence Based Medicine Journal Club

- Evidence based medicine journal club means incorporating principles of evidence based medicine approach i.e.. Leading the discussions towards synthesizing best available research evidence.
- Is conducting a systematic and structured presentation and discussion using the approach of critical appraisal of published literature.

Why Evidence Based Journal Club

- Learn to interpret findings presented in the medical literature after critical appraisal: **Practitioners can apply knowledge with more confidence.**
- Learn about research methodology, because EBM is application of clinical research or specifically clinical epidemiology: **Get updated in newer research methodology techniques.**
- Get updated on the specific domain knowledge: **Is a collective work of recent literature search.**

Structure of Evidence Based Medicine approach

- Ask clinically relevant well focused and the most pressing yet answerable question.
- Collect sufficiently enough, most appropriate or relevant, recent and best research evidence.
- Critically review the evidence (Critical appraisal techniques).
- Evaluate this evidence integrating physicians experience and patient preferences.
- We can apply cost effectiveness criteria also.
- Review the practice based on feed back from individual clinical experience, colleagues and modify.

What is Critical appraisal?

- Critical appraisal is the process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision” (Hill and Spittle house, 2001, p.1).
- Critical appraisal is an essential step in the process of translating research into practice. Systematically reviewing the article focusing on rationale, Methodology, scrutinizing its data collection and analysis methods, and evaluating how its findings are presented will help to know whether conclusions should influence practical decision-making.

Steps for Journal club(CAT/EBM club)

Step1. Select a stimulating and useful article

- Choose an article based on encounter with a patient or related to your ongoing research or a discussion with your colleagues or attending a academic activity (CME, Seminar etc.).
- Article should be report based on original research.
- Review article is not selected because it lacks methods section.
- Meta-analyses/ Systematic review/ Treatment guidelines are less preferred unless there is a compelling pressure form the hospital administration.

Step 2. Check author's track record and credibility in research.

- Source credibility is verified by looking in to their affiliation also
(From which institution the research comes)
- Do you know the authors?, their previous work? Has it been appreciated before ?(citation index)
- Is it a sponsored study? What are all the conflicts of interest and anything not declared?

Step 3. Quick “Article Check list” /By screening the abstract

- Is this article of interest to me and applicable to my particular clinical setting?
- Why was the study done?(Motivation for study or justification) (see background, objectives etc.)
- How was it done?(The specific methodology):Population, inclusion exclusion criteria, choice of design
- What has been found? :(Observations/results)
- What are the implications? (Discussion)
- What else is of interest?(Gaps in knowledge identified leading to further research etc.)

Each of these elements needs expansion as given in the next slides
(Background and Methodology)

Step 4. Looking to justification for the study

- What is the context and motivation for doing the study?
- Look the background.
- Is the study capable of modifying the clinical practice/ influence the clinical decision making. (Go for new decision/ increase confidence of the physician with a particular decision)
- Is the population and setting identical to yours in terms of cultural context/other attributes of patients like age, socio economic status, ethnicity etc.

Methodology details

- Research question (The primary research question : PICOT Format), Objectives.
- Design (Specific design and justification for that choice)
- Study subjects(Population, Inclusion, Exclusion criteria)
- Predictor variables
- Outcome variables

Questions on the quality of conclusions

- **Are the effect estimates appropriate?**
- Validity issues: Did the researcher really get what was intended to be got.
- Precision issues: How much exact or precise are the results?
Confidence intervals of effect estimates too broad or too narrow?
- Generalizability issues: How far we can extrapolate the results of the study beyond this particular sample.?

Questions/Clarifications

Question: In the context of standard treatment guidelines or protocols, do we need to adhere to that or can it make conflict with evidence based medicine practice?

- **Answer:** Ideally guidelines need to be evidence based and timely updated. The problem is that most of the guidelines are consensus based and not updated. Multiplicity of such guidelines creates confusion. Moreover most of the treatment guidelines are context specific and need to be locally customized.

Question: What is the difference between Standard Treatment Guidelines and Protocols?

- **Answer:** Protocols are different from guidelines. This need to be adhered because they are duly endorsed by appropriate authorities. Protocol violations in a specific situation need to be justified by the physician
- Protocols are used in the context of emergencies like intensive care situation, new born etc.

Question: Why this is not becoming popular?

- **Answer:** The constraint for evidence based medicine practice is availability of resources So also is for the Journal club and perhaps time is the most important constraint factor.

Take home messages

- Journal club is the most popular teaching learning platform especially for continued learning of research methodology.
- Transforming the journal club to an evidence based medicine journal club is conducting the journal club according to the principles of evidence based medicine using critical appraisal technique and presenting in a systematic form.

Further Reading

- 1. Robert A Dixon, James F Munro & Paul B Silcocks: The Evidenc Based Medicine Work book :Critical appraisal for clinical problem solving Butterworth Heinmann Oxford, 1997
- 2. Bernadette Mazurek Melnyk and Ellen Fineout Overholt : Evidence based practice in Nursing and Health care :Lippincott Williams &Wilkins, 2005
- 3. Kameshwar Prasad :Fundementals of Evidence based Medicine Meeta Publiterations, New Delhi, 2004
- 4.Hill and Spittle house, 2001, p.1 [http:// citeseerx. ist.psu.edu /viewdoc /download ?doi=10.1.1.524.2610&rep=rep1&type=pdf](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.524.2610&rep=rep1&type=pdf).

Thank You