

Evidence Based Medicine

Medicine is the science of probability. Every clinician during his practice comes across the need for information while managing the patient's problems. This need could be related to diagnosis, therapy, prognosis or etiology. The clinician practicing traditional medicine will most of the time try to answer this need by consulting his seniors or experts or by referring to text books. Evidence based medicine (EBM) answers this gap in knowledge or need for information by following systematic and scientific skills of EBM. Although the philosophy of EBM originated in Paris, almost 150 years ago, it only got conceptualised in 1960 when David Sackett during his residency in internal medicine realised that clinical epidemiology and biostatistics can have an application in clinical practice.

For the last several decades a paradigm shift is taking place in the practice of medicine. New knowledge is being generated with respect to the diagnostic tests, therapeutic options and prognostic markers. A practicing clinician needs to keep himself updated with this new information to provide better patient care.

Evidence based medicine was defined by Gordon as "Optimal integration of best research evidence with clinical expertise and patient values". Best research is the research that is patient focussed and related to the value of the prognostic markers and the outcomes of the therapeutic options. During the past 2-3 decades, Evidence Based Medicine has made a major impact on patient care. Clinicians need to provide up to date treatment to their patients while incorporating valid new information. The ultimate goal should be to provide better care to the patients in order to lead long healthy life. To do this a clinician needs to keep himself updated with the newer diagnostic methods, value of the latest therapeutic and preventive regimens.

Evidence Based Medicine helps the clinicians find the information that will ensure that they provide optimum care for their patients. By applying the principles of EBM the clinician makes a decision

about patient care in consultation with the individual patient. EBM also begins with an admission on the clinician's part that a gap in his/her knowledge with respect to the diagnosis, therapy / prognosis exists and must be filled before a proper decision can be made. The process of EBM involves five steps.

Step-1. Converting medical information needs into Patient Centered, Pertinent competent, answerable questions.

Gap in the knowledge for patient management is converted in-to an answerable question. In this step the patient's clinical situation is described and the need for information with respect to diagnosis, therapy or prognosis is converted in-to a simple answerable question.

Step-2. Tracking down with maximum efficiency, the best evidence with which to answer the question.

By using the key words from the question that is developed in the first step the external research evidence published in literature is tracked down through the search engine and database like Medline, Cochrane etc. During this step the best clinical research evidence that is published and answers the clinical question is selected.

Step-3. Critically appraising the evidence for its validity and usefulness.

This is the most important step which refers to the validity of the evidence i.e. the research article that has been selected as the external research evidence which answers the question related to the patient problem. During this step the clinician tries to find out to what extent the results mentioned in the article are true and can be applied on

his/her patient. By using the skills of Critical Appraisal the clinician will be able to assess the evidence for its validity relevance and usefulness.

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Step-4. Applying the results of critical appraisal in clinical practice.

Once the clinician is convinced that the results of the selected published evidence are valid and can help to provide better patient care he decides to apply it on his patients. While doing this the clinician takes in-to consideration the patient's concerns, preferences and emotional needs.

Step-5. Evaluating performance of the evidence in clinical practice.

Here the clinician assesses the whole process and tries to find out how well the new evidence has helped to answer his patient focused question which was based on the need for information and helped to improve patient care.

EBM also involves applying traditional skills of medical training. A sound understanding of pathophysiology is necessary to interpret and apply the results of clinical research. Understanding patient's suffering is most essential for the practice of EBM.

External clinical evidence can inform, but can never replace, individual clinical expertise and it is this expertise that decides whether the external research evidence applies to the individual patient at all and if so, how it should be integrated in-to clinical decision.

EBM begins with patient problem and ends with better quality patient care. It gets research in-to practice by providing evidence. This will result in better interventions. By practicing EBM every clinician becomes a self directed lifelong learner. One of the goals of medical school should be to produce clinicians with the skills of Evidence Based Medicine.

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How to cite this article: NaikV. Evidence based medicine Med Inn 2013;2: 1-2

Source of funding - Nil

Conflict of interest - None declared