

Only a fool learns from experience. The trick is to learn from the experience from others.

--Goethe

## **Evidence Based Medicine (EBM) What, Why and How**

The term evidence based medicine (EBM) appeared in medical literature in 1991 which was coined by Sackett and colleagues at McMaster University and termed as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.”

EBM can also be defined as the integration of clinical information obtained from a patient with the best evidence available from clinical research and experience and the application of this knowledge to the prevention, diagnosis or management of disease in that patient.

The process of EBM as outlined by Sackett et al follows five key steps:

1. Identification of a clinical problem: expressed as answerable question.
2. Search for answering questions for best available evidence
3. Closeness of truth and clinical applicability; critical appraisal
4. Integrate this approach with clinical experience to reach a decision – can be applied to the clinical problem.
5. Evaluation of the practitioner’s performance by relating clinical decisions to the best available evidence.

In modern days electronic revolution it will not be unusual for students to come to class or patients to clinician’s consulting room “armed” with printouts from Internet and probing questions and giving recent information on diseases and drugs. Each year over 2 million scientific papers are published and clinician’s performance is enhanced if clinical decision is made based on best available evidence. EBM is also now incorporated into undergraduate and postgraduate medical curriculum and there are courses in many universities abroad on how to practice and teach EBM. Evaluation of medical students and residents taught EBM skills shows that this approach improves their ability to evaluate clinical literature and enhances life long learning skills in day-to-day medical practice after graduation and post graduation. EBM is also about keeping up to date or continuing medical education.

One advantage to applying the EBM approach is that it starts with identification a clinical problem faced by a patient and clinician different from an area that researchers have chosen to study. New clinical guidelines, e.g., New NICE (National Institute for Clinical Excellence) guidelines for asthma management are being developed on evidence based principle which might affect prescribing and adobled universally. The purpose of EBM is to propagate the evidence but not to replace individual’s clinical experience. Hence it is important to keep insight that one should not expect clinical practice to be 100% evidence based – however, one should not compromise better patient care by not counting on evidence when it is readily available by different sources.

In its most fundamental stage to effectively apply EBM to a clinical problem is to formulate a clearly focused question. The four components to a clearly focused question, which is often referred as PICO should be taken and used to frame the search strategy and they are:

- The Patient or Problem Component
- The Intervention or Exposure Component
- The Comparison or Control Group Component, and
- The Clinical Outcome Component

There are two main types of resources that provide access to high quality research information. Those that have already been evaluated, synthesized and summarized in easy to use formats, are the Cochrane Library, clinical evidence, the TRIP database and those that provide databases or primary research e.g., PubMed or MEDLINE. Besides medical text books and EBM textbooks and World Wide Web are also source of evidence.

One with known source of high quality systematic reviews is the Cochrane Library which provides reliable summaries or evidence using rigorous methodology designed to reduce bias On the basis of systematic review meta analysis, which is a statistical method of combining and summarizing the results of trials to meet the minimum quality criteria is done.

The Cochrane Library is a quarterly electronic publication on CD ROM and on the Internet and provides high quality regularly updated collection of EBM and practice. The Library also includes the Cochrane database of systematic reviews – evidence based systematic reviews. It distillates the latest evidence and intervention on health care and maintains the update by international organization – Cochrane Collaboration. These provide high quality information to people giving and receiving care to make well informed decisions about health care and those responsible for research and teaching.

**Reference:**

Moyer Virginia A et al – Evidence based paediatric and child health BMJ books 2000

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