

## Evidence Based Medicine (EBM)

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In order to give the best care to patients and Families, doctors need to integrate the highest quality as scientific evidence with clinical expertise and due opinions of the family.

Evidence Based Medicine is defined on "The explicit, judicious and conscientious use of current best evidence in making clinical decisions." The aim of EBM is to improve patient care. Historically, medical decisions were based purely on a trial and error basis and personal experience. With the advancement of modern medicine, the need to make scientific decisions become increasingly important. The internet has revolutionised patient care and more and more patients are challenging medical decisions. The ever increasing malpractice suits necessitate clinicians to be fully informed and up to date with current best practice. Information technology has opened doors whereas accessibility of reliable medical literature is concerned.

Databases such as Cochrane, Medline, Embase etc are easily accessible and up to date scientific information is available to practice medicine based on current best evidence.

### LEVELS OF EVIDENCE:

The EBM boom has resulted in increasingly complex subdivisions and different medical journals have difficult to understand sub classifications of the term.

A simple, easy to understand subdivision of its levels is as follows:

Level Ia - Evidence obtained from meta – analysis of randomised control trials (RCT) or systematic reviews of RCTS e.g., - Cochrane reviews.

Level Ib - Randomised controlled trials.

Level IIa - Cohort studies

Level IIb - Case control studies

Level III - Case series, case histories, peer reviewed texts etc.

Level IV - Personal experience.

Although different from the strict EBM classification this subdivision helps to understand the concept and is most useful for those not familiar with the term.

Level I - Most reliable evidence - ie – strong, definite evidence.



Level IV- Evidence that is weak in comparison to the above.

### How to Practice EBM:-

- a. Framing the question that needs a scientific up to date and reliable answer.

e.g: Is nebulised salbutamol more effective than its inhaled version (ie Nebulised VS inhaled salbutamol)

- b. NARROWING the questions.

e.g: Is nebulised salbutamol more effective than inhaled salbutmol used with a spacer in children under 5yrs of age.

(i.e. nebulised vs inhaled salbutamol / spacer device/ children / less than 5 yrs).

- c. Searching for evidence

e.g. Internet, Medical Journals, Text books

- d. Appraising the evidence for its validity.

i.e – does the relevant trial / article answer the specific question., ?

- e. Application of the evidence

- f. Audit the use of the evidence and compare results.

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### **Applying EBM to every day hospital teaching**

Most teaching hospitals in the country have access to online periodicals and relatively good libraries.

Free access of medical journals to under developed countries (eg BMJ, Archives of Diseases in Childhood etc) has made it easy to obtain comment as well as past papers relevant to clinical practice.

A suggested method would be as follows:-

A ½ hr to 1 hr should be set aside each week to practice skill in obtaining and appraising evidence by devising a Journal Club.

In order for these sessions to succeed, a senior member of the faculty must be appointed as the head and full cooperation and participation of faculty members is needed.

Each week, a clinical question must be framed. eg – what are the effects of treatment of UTI in children.

Following framing of the question, trainees are given a week to search for evidence. Following this, on the day of the journal club each evidence

is appraised for its closeness to the truth (validity) and evidence is classified as strong or weak. This evidence is compared to the units practice and necessary changes made should the evidence be robust.

Following incorporation of the evidence, an audit is carried out in 6 months to a year and outcome ascertained. Has applications of the evidence resulted in better outcome /practice?

Thus, in summary, EBM is an extremely competent tool to base best medical practice. It is a concept widely practiced in developed countries where lack of its use is synonymous with incompetence and can have serious negative effects on a doctors medical career.

Doctors in both developed and developing countries must be familiar with the concept of EBM. With parents increasingly becoming familiar with medical conditions, this will save us from potentially embarrassing questions. In addition, effective medicine reduces cost of health carer and this is a benefit to everyone as well and reduces hospital stay.