Evidence-Based Medicine: Introduction > Practice
實證醫學的介紹與實行

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Objectives

- Become familiar with the history and growth of Evidence-Based medicine.
- Understand Evidence-Based terminology.
- Be able to select appropriate Evidence-Based resources.
- Have an opportunity to learn and apply basic statistical techniques used in evaluating the Evidence-Based literature.

What is:

Evidence Based Medicine?

Evidence Based Medicine

- *Sackett*: Integrating individual expertise with the best available clinical evidence from systematic research.
- *Domino*: Basing the care of **patients** on clinical research whose outcomes are our main priority.

History of EBM

- Traditional Deductive Reasoning (the old way)
  - If you understood the Pathophysiology and
  - had a treatment that addressed this, then
  - using that treatment would improve the disease.
- Evidence Based Reasoning
  - If there is a preponderance of data, when viewed in aggregate (published and unpublished) that supports a treatment for a disease, then can it be safely used.

Review of History

- 1972: Archie Cochrane : Publish : Effectiveness and Efficiency : RCT.
- 1960's: Dave Sackett: Nephrologist. USA.
- 1980's: Clinical Epidemiology & Biostatistics at McMaster University: Canada.
- 1992: UK:Cochrane Collaboration by NHS(national health service) for review group.
- 1997: USA:12-EBPC(evidence based practice center) by AHCPR.

Evidence Based Medicine =

- An integration of…
  - The best research evidence
  - Clinical expertise
  - Patient values

Sacket DL, et. al. Evidence-based medicine: how to Teach and Practice EBM. 2nd ed. Edinburgh: Churchill Livingston, 2000

What evidence-based medicine is:

"Evidence-based medicine結合
最好的研究證據
臨床專門的知識和技術以及
病患的價值"

- *Sackett, et al 2001*

I. Individual Clinical Expertise:

- Clinical skills and clinical judgement
- Vital for determining whether the evidence (or guideline) applies to the individual patient at all and, if so, how

II. Best External Evidence:

- From real clinical research among intact patients.
- Has a short doubling-time (10 years).
- Replaces currently accepted diagnostic tests and treatments with new ones that are more powerful, more accurate, more efficacious, and safer.

III. Patients' Values & Expectations

- Have always played a central role in determining whether and which interventions take place
- We're getting better at quantifying and integrating them

JASPA*

(Journal associated score of personal anxiety)
對期刊相關的個人焦躁的評分

J: Are you *矛盾*about renewing your **JOURNAL** subscriptions?

A: Do you feel **ANGER** towards *多產的作者*?

S: Do you ever use journals to help you **SLEEP**?

P: Are you surrounded by **PILES of PERIODICALS**?

A: Do you feel **ANXIOUS** when journals arrive?

0	(?liar)
1-3	(normal range)
>3	(sick; at risk for polythenia gravis and related conditions)

* Modified from: BMJ 1995;311:1666-1668

Evidence-Based Medicine

- The reason of interest: 4 realizations

- Daily need for valid clinical information
- inadequacy of traditional sources of information
- disparity between experience and up-to-date knowledge & performance
- inability to afford time for finding and assimilating the evidence

Evidence-Based Medicine

- The reason of interest: 5 developments

- strategies for tracking down and appraising evidence
- systematic review (Cochrane Collaboration)
- 2ndary journals
- information technology eg. internet
- strategies for lifelong learning and improving clinical performance

What EBM is not:

- EBM is not cook-book medicine
  - evidence needs extrapolation to my patient's unique biology and values
- EBM is not cost-cutting medicine
  - when efficacy for my patient is paramount, costs may rise, not fall

Evidence-Based Medicine: The Practice

When caring for patients creates the need for information:

1. Translation to an answerable question (patient/maneuver/outcome).
2. Efficient track-down of the best evidence
   - secondary (pre-appraised) sources
     e.g., Cochrane; E-B Journals
   - primary literature

Evidence-Based Medicine: The Practice

3 Critical appraisal（評析）of the evidence for its validity and clinical applicability ➔ generation of a 1-page summary.

4 Integration of that critical appraisal with clinical expertise and the patient's unique biology and beliefs ➔ action.

5 Evaluation of one's performance.

We needn't always carry out all 5 steps to provide E-B Care

❍Asking an answerable question.

➔Searching for the best evidence.

➔Critically-appraising the evidence.

❍Integrating the evidence with our expertise and our patient's unique biology and values

❍evaluating our performance

3 different modes of practice

➔"Searching & appraising"
- provides E-B care, but is expensive in time and resources

➔"Searching only"
- much, quicker, and if carried out among E-B resources, can provide E-B care

➔"Replicating" the practice of experts
- quickest, but may not distinguish evidence-based from ego-based recommendations

Even fully EB-trained clinicians work in all 3 modes

➔"Searching & appraising" mode for the problems I encounter daily.

➔"Searching only" mode among E-B resources for problems I encounter once a month.

➔"Replicating" the practice of experts mode for problems I encounter once a decade(and crossing my fingers!).

Evidence-Based Medicine

- 5 steps
- 3 modes of practicing EBM

- Asking answerable questions
- tracking down the best evidence
- critically appraising the evidence for validity, importance, & applicability
- integrating the appraisal with clinical expertise & patients' preference
- auditing our performance in steps 1-4

EBM

- Evidence-based medicine
- Epidemiology + statistics + practice
- Literature-based medicine
- Cost-effectiveness Medicine
- From original paper to review article

Paradigm Shift

- Changing between original and review
- Evidence-based in clinical practice
- Learning according to levels of evidence
- Skills to make critical appraisal topics
- From Sp / Sn to NNT / LR / OR
- Resources on the internet
- Review a clinical question through RCT’s