Evidence-Based Medicine: What’s New?

Psychiatry Grand rounds
Fred Tudiver, Family Medicine

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EBM Changes the Paradigm

Three EBM concepts
1. Practicing with only what you learned in med school, from experts, from textbooks, as well as your clinical experience versus practicing as a lifelong learner
2. Getting best evidence information efficiently using medical information resources, especially prevalidated ones
3. How have medical information resources evolved? Where are they going?

EBM: A brief Review
The Paradigm Has Not Changed

- 5A's
  - Ask answerable questions
  - Acquire best evidence answer
  - Appraise the evidence
  - Apply into practice
  - Assess effect on practice

Physician Knowledge

- Knowledge of current best care
- Knowledge of best care


94% of 62 studies found decreasing competence for at least some tasks, with increasing physician age.
Information Overload

Growth of PubMed Citations 1966-2008

JASPA*
(Journal associated score of personal angst)

0 (7% are)
1-3 (normal range)
>3 (sick; at risk for polythenia gravis and related conditions)

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

Is keeping up to date Mission Impossible?
“Just in Time” learning

- Evidence cart on ward rounds - 1995
- Looked up 2-3 questions per patient
- Took 15-90 seconds to find
- Change about 1/3 decisions

Dave Sackett

The Usefulness Equation

- Usefulness = \( \frac{\text{Relevance} \times \text{Validity}}{\text{Work}} \)

Slawson, Shaughnessy

EBM is Still a Great (Lifelong) Learning Tool

<table>
<thead>
<tr>
<th>PASSIVE LEARNING (TRADITIONAL)</th>
<th>ACTIVE LEARNING (EBM)</th>
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<tr>
<td>ANNUAL CME CONFERENCES</td>
<td>RESPONDS TO QUESTIONS</td>
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<td>Occasional JOURNAL BROWSING</td>
<td>SELF-DIRECTED, LIFELONG LEARNING</td>
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<td>“JUST IN CASE” METHOD</td>
<td>“JUST IN TIME” METHOD</td>
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What Has Recently Changed?

1. Primary and secondary online resources have changed and improved
2. Improved EBM software
3. The choice of platforms has increased
4. Wireless access has become routine
5. Evolution of Push and Pull technologies
6. Evaluation tools for EBM: The EBM OSCE
The evolution of information resources for evidence-based decisions

- Systems
- Summaries
- Synopses
- Syntheses
- Studies

Examples
- Computerized decision support (EHR)
- Evidence-based "live" texts (Clin Evid)
- CATs and "CAT" journals
- Systematic reviews
- Original journal articles

Resource | How many of you use this?
---|---
Up to date
Clinical Evidence
Trip Database
Google
Google Scholar
PubMed
Bandolier
Cochrane
DARE
EMBASE
Essential Evidence Plus
Dynamed
Epocrates
BMJ Updates
Evidence-Based Mental Health

Acquiring the Best Evidence answer: Secondary versus Primary data sources

- What to search?
- Secondary Literature
- Primary Literature

Some Secondary Literature Databases
- Trip Database
- Essential Evidence +
- BMJ Updates
- ACP Journal Club
- JPP POEMS
- Evidence Based group of journals/periodicals
- Cochrane Database of Systematic Reviews
- D.A.R.E.
- FPIN Clinical Inquiries
- National Guideline Clearinghouse
- Bandolier
- UpToDate
- DynaMed
What’s New in Some Secondary Online Resources

1. TRIP is now free and recently improved
2. InfoRetriever has morphed into “Essential Evidence Plus”
3. BMJ Updates
4. Cochrane Database of Systematic Reviews: multiple databases

TRIP Database

- Started in 1997 to search multiple databases
  - Evidence Based Synopses
  - Systematic Reviews
  - Guidelines
  - Clinical QA
  - Core primary research
  - Extended primary research
  - eTextbooks
  - Patient Information
- MEDLINE filters
- New: level of evidence slide

Essential Evidence Plus (InfoRetriever)

- Rapid access to variety of evidence-based sources of information with a uniform user interface on a desktop or handheld device
- Point-of-care access to evidence
- Developed by Mark Ebell et al at MSU
- Updates often

Key sources of information (>100 journals)

1. Abstracts of Cochrane Reviews, Protocols (5933)
2. Decision support calculators (>300)
3. Structured Evidence Appraisals
   - INFOPOEMS (>3500)
4. Evidence-based guidelines (>1500)
5. Diagnostic test and H&P examination calculators (>3500)
Key sources of information

6. Griffith’s 5 Minute Clinical Consult (1047 summaries; >1000 photos - Derm expert)
7. E/M coding assistant
8. ICD9 look-up tool (1500 codes)

BMJ Updates

- Collaboration of BMJ and McMaster HIRU
- Best evidence articles from top 120 journals
- Relevance ratings per specialty

Cochrane

- 5933 reviews and protocols
- Paired with DARE (11,447 reviews)
- “gold standard” for systematic reviews

Primary Literature Databases

- PubMed (MEDLINE)
- SUMSEARCH: “Meta” online primary site
  – Useful for low “hit” searches
PubMed
• MEDLINE is the database; PubMed is the free interface to MEDLINE
• >5400 journals
• >19 million citations
• Updated almost daily
• Undifferentiated and not prevalidated

Efficient searching in PubMed
• Steps in conducting an efficient literature search
  – Phrase your question so it’s answerable

Formulate an answerable clinical question
• Structure of answerable questions
  – PICO-T
    – Population/Patients
    – Intervention
    – (Comparison)
    – Outcome
    – (Time)
• The “best” research type depends on the question type

Best Research Method?
• Treatment question?
  – RCT or systematic review of RCTs
• Diagnostic question?
  – X-sectional OR comparison of test with gold standard
• Prognosis question?
  – cohort OR prospective OR longitudinal
Efficient Searching in PubMed

- MeSH Headings
- Searching the way librarians do it
- Narrowing a search
- Using the History tool
- Clinical Queries tool
- My NCBI

Simplify searching

PubMed Clinical Queries
- Built in methods filters
- Systematic review filter

The Challenge

- Still a minority of residency programs have integrated Evidence-Based Psychiatry
- Some resistance to change by senior faculty
  - Needs a shift in attitudes, skills
- Shift to evidence-based journal clubs
  - Interactive
  - Much more than just critical appraisal
  - Need to facilitate evidence into practice

Summary

- The question should be
  - Not whether we should practice EBM
  - But how and when
- The tools are getting easier to use
- And more efficient to use