Finding the Evidence: a review

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UMDNJ-RWJ Library of the Health Sciences
Evidence Based Medicine

Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.
Evidence Based Medicine process

- Convert information needs into answerable questions
- Track down the best evidence
- Critically appraise evidence for validity and usefulness
- Apply results to clinical practice
- Evaluate performance
Convert information needs into an answerable clinical question

Most well framed clinical questions succinctly & concisely address a relationship between the following four components

- **P** -- The patient or problem being addressed
- **I** -- The intervention or exposure under consideration
- **C** -- A comparison intervention or exposure
- **O** -- Clinical outcome(s) of interest
Does antibiotic therapy benefit patients with a sore throat

- **P**-- sore throat
- **I**-- antibiotic therapy
- **C**-- no drug treatment
- **O**-- shorten duration of symptoms, protect against complications
MEDLINE

- 4,300 journals indexed
- Over 11 million citations
- Cover years 1966 to present
Guide to Research Methods

The Evidence Pyramid

Randomized Controlled Studies
Cohort Studies
Case Control Studies
Case Series
Case Reports
Ideas, Editorials, Opinions
Animal research
In vitro ('test tube') research
Randomized Controlled Double Blind Studies
Finding the Evidence in MEDLINE

Limit to one or more of these publication types:

– clinical trial
– controlled clinical trial
– randomized controlled trial
– meta analysis
Critically appraise evidence for validity and usefulness

- Was the assignment of patients to treatments really randomized?
- Were all clinically relevant outcomes reported?
- Were the study patients recognizably similar to your own?
- Were both clinical and statistical significance considered?
- Is the therapeutic maneuver feasible in your practice?
- Were all the patients who entered the study accounted for at its conclusion?
Linking to Evidence Based Medicine Databases

- In MEDLINE choose limit to EBM Reviews
  - Best Evidence (article review)
  - DARE (article review)
  - Cochrane (topic review)
Evidence Based Medicine Reviews

- Best Evidence
  - journal article review
- Database of Abstracts of Reviews of Effectiveness (DARE)
  - journal article review
- Cochrane Database of Systematic Reviews
  - systematic review of specific topics
  - an international network of individuals
Systematic Review

- Systematic reviews locate, appraise and synthesize evidence from scientific studies in order to provide informative empirical answers to scientific research questions.
- Systematic reviews differ from other reviews in that they adhere to a strict scientific design in order to make them more comprehensive, to minimize bias, and so ensure their reliability.
Best Evidence

- Electronic version of ACP Journal Club and Evidence Based Medicine (BMJ group)
- Systematically searches 150 medical journals
  - identifies studies that are methodologically sound and clinically relevant
  - includes an enhanced abstract and commentary of over 1600 articles dating back to 1991
    - in 1995 broadened scope to include pediatrics, OB/GYN, family medicine, surgery and psychiatry
Database of Abstracts of Reviews of Effectiveness (DARE)

DARE is a full-text database containing critical assessment of systematic reviews from a variety of medical journals.

Reviews are identified by searching bibliographic databases (Current Contents, MEDLINE, CINAHL, ERIC, Biosis, PsycINFO, and Allied and Alternative Medicine) hand searching of key major medical journals, and by scanning the grey literature.

1995 to the present
Cochrane Database of Systematic Reviews

- Full text of systematic reviews prepared by the Cochrane Collaboration
  - Complete Reviews
    - regularly updated by Collaborative Review Groups (53)
    - 1800+ systematic reviews
    - updated quarterly
  - Protocols
    - reviews currently being prepared
    - background, objectives and methods of reviews in preparation
Cochrane (continued)

Systematic review articles must include:
- specific clinical question that was addressed
  - including criteria for including study
- explicit statement of the methods used
  - search strategy, databases searched, years studied
- conclusions - implications for practice

Protocols
- background, objectives and methods of reviews in preparation.