clifchen@ms1.hinet.net

http://www.wanfang.gov.tw/ebm

2004/10/25

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question formation

evidence finding

critical appraisal

clinical application

process auditing
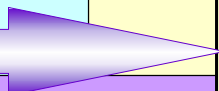
-                         (search)
-
  - Cochrane
  - Medline, PubMed,
  - MD Consult
- critical appraisal
- apply to patients

---

update knowledge

browsing	problem solving

primary journal	secondary journal	initial question

eg. JAMA, NEJM	eg. Evidence Based Medicine, EBM reviews,	searchable question

searching evidence

Search evidence

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                    ┌──────────────────────┐
                    │  searching evidence  │
                    └──────────────────────┘
                      ┌──────────────┴──────────────┐
          ┌──────────────────┐        ┌──────────────────────────┐
          │ medical database │        │ internet search engine   │
          └──────────────────┘        └──────────────────────────┘
          ┌──────┴──────┐
  ┌──────────────┐  ┌──────────────┐
  │  prefiltered │  │  unfiltered  │
  └──────────────┘  └──────────────┘
  ┌──────────────────┐  ┌──────────────────┐
  │ Cochrane Library │  │     Medline      │
  │  Best Evidence   │  │     PubMed       │
  │ ACP Journal Club │  │                  │
  └──────────────────┘  └──────────────────┘
```
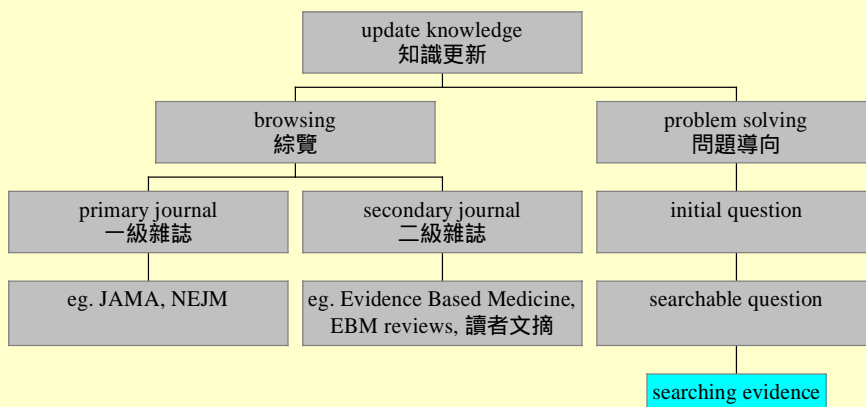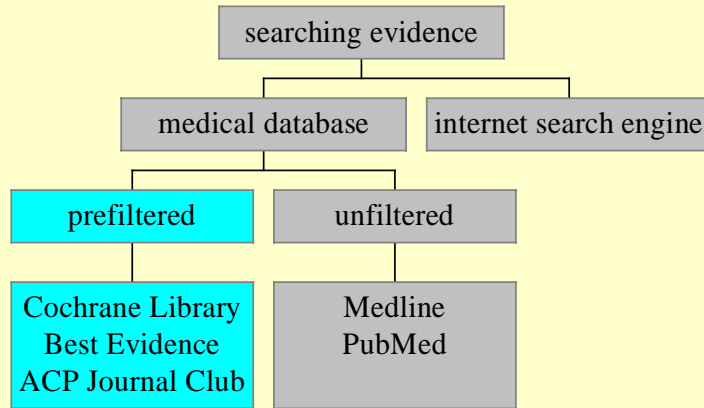
	Evidence-Based Review articles	Guidelines Technology assessment	Journal articles		
	Cochrane DARE EBMR JBI WOS….	NGC HTA SIGN NICE NZGG CMA Infobase	Medline PubMed EMBASE SDOS ProQuest Science Direct ACP journal club	STIC NCCAM NHRI PQDD OPEN ……….	Questia …..

Hierarchy of Evidence ➡

Google, yahoo, altavista…..

MD consult, TRIP detabase, SUM search…..
Dogpile, Mamma…….

Physician opinion leaders have limited influence on adherence to best-practice guidelines

- **Evidence-based Healthcare**Copyright © 2003 Elsevier Ltd. All rights reserved

- **Volume 7, Issue 3, Pages *154-156* (September 2003)**

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12 → 1

Systematic Review Databases

- The Cochrane Library:
  - Best source for structured, <u>systematic</u> reviews
  - Explicit search & quality criteria (*free abstracts*)
- Database of Abstracts of Reviews of Effectiveness (DARE)
  - Structured abstracts of systematic reviews meeting highest quality standards
  - A (*free*) part of the Cochrane Library
- Joanna Briggs Institute: Best Practice in Allied Health
  - Systematic reviews, Nursing, Pharmacy, community health, health promotion, speech pathology

Prefiltered DATABASES

- Cochrane Library (HINT   )   ➡ 1
  - Cochrane Database of Systematic Reviews (CDSR)
  - Cochrane Controlled Trials Register (CCTR)
  - Database of Reviews of Effectiveness (DARE)
  - NHS Economic Evaluation Database
  - Health Technology Assessment Database
- EMBASE

Cochrane Library

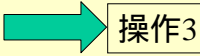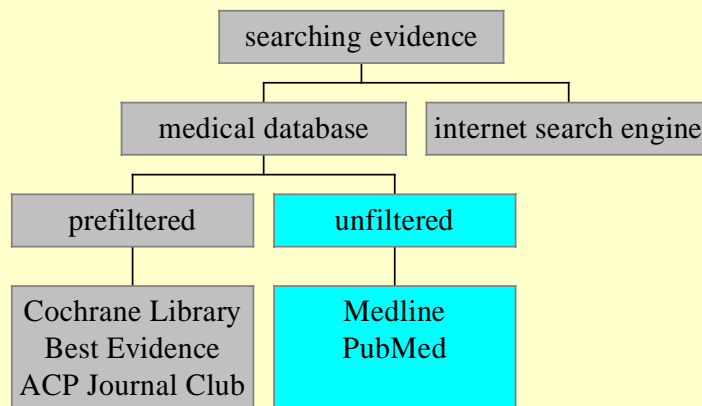- http://www.updatesoftware.com/cochrane/abstract.htm

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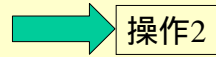
"pre-filtered" EBM resource

- To answer focused clinical questions, the most efficient approach is to begin with a "pre-filtered" evidence-based medicine resource such as
  - Best Evidence,
  - the Cochrane Library, or
  - Clinical Evidence

National Guideline Clearinghouse

- **Boolean Operators (AND, OR, NOT, *, (a or b) and c)**
- **http://www.guideline.gov** → 3
- **Screening for breast cancer: recommendations and rationale, 2002**
- **filter**
  http://www.guideline.gov/search/detailedsearch.aspx

Search evidence

searching evidence

medical database   internet search engine

prefiltered   unfiltered

Cochrane Library
Best Evidence
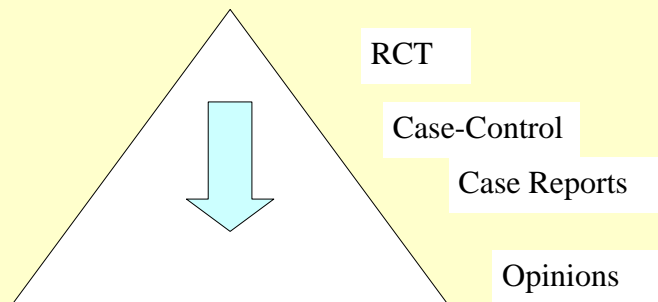ACP Journal Club

Medline
PubMed

Unfiltered DATABASES

- MEDLINE
- CINAHL
- PsycINFO
- ERIC (Education Resources Information Center)

Searching

- **Key Words :**
- **top down**

RCT

Case-Control

Case Reports

Opinions

Can <u>hyperbaric oxygenation</u> accelerates the healing rate of nonischemic chronic <u>diabetic foot ulcers?</u>

PECOT

- P: nonischemic chronic diabetic foot ulcers
- E: Hyperbaric oxygenation accelerates
- C: wound care
- O: the healing rate
- T: one month

Text + Graph

MEDLINE

- If a search of UpToDate, Best Evidence, and the Cochrane Library does not provide a satisfactory answer to a focused clinical question, **it may be time to turn to MEDLINE.**
- the first medical literature database
- something for everyone

Summary points

- Not all medical articles are indexed on Medline, and many that are have been **misclassified**
- Searching by **textword** can supplement a search by MeSH headings
- To increase the sensitivity of a search, use the **"explode"** command and avoid using subheadings
- **Scan titles on screen** rather than relying on the software to find the most valid or relevant ones

---

'   '

- **Problem 1: You are trying to find a known paper**
  - –

- **Problem 2: You want to answer a specific question**
  - –

- **Problem 3: You want to get general information quickly about a well defined topic**
  - –

- **Problem 4: Your search gives irrelevant articles**
  - –

- **Problem 5: The search gives no articles, or too few**
  –

- **Problem 6: You don't know where to start searching**
  –

- **Problem 7: Limiting a set loses important articles but does not exclude those of low methodological quality**
  –

- **Problem 8: Medline hasn't helped**
  –

Problem 1: You are trying to find a known paper

- *Solution: Search the database by field suffix (title, author, journal, institution, etc) or by textwords.*

- Useful search field suffixes (Ovid)

4
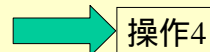
Word in abstract	epilepsy.ab
Author	smith-r.au
Journal	lancet.jn
Single word, wherever it may appear as a MeSH term	ulcer.me
Word in title	epilepy.ti
Word in title or abstract	epilepsy.tw
Unique identifier	91574637.ui
Year of publication	87.yr

confidentiality.ti and british journal of general practice.jn

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Problem 2: You want to answer a specific question

- *Solution: Construct a focused (specific) search by combining two or more broad (sensitive) searches*

- anorexia nervosa/ and osteoporosis/ and contraceptives, oral/

Problem 3: You want to get general information quickly about a well defined topic

- *Solution: Use subheadings and/or the "limit set" options.*
- limit 5 to human

Problem 4: Your search gives irrelevant articles

- *Solution: Refine your search as you go along in the light of interim results.*
- i.INCREASING PRECISION
  (WHERE THERE ARE TOO MANY HITS)
- ii. Boolean AND
- iii. Boolean NOT
- iv. Quality filters
- v.   Limits
- vi. (surrogate not mother$).tw

Problem 5: The search gives no articles, or too few (I)

- Solution:
  - Firstly, don't overuse subheadings or the "limit set" options.
  - Secondly, search under textwords as well as MeSH terms.
  - Thirdly, learn about the "explode" command, and use it routinely

---

Problem 5: The search gives no articles, or too few (I)

- i. INCREASING SENSITIVITY (WHERE THERE ARE TOO FEW HITS)
- ii. Subject Headings/Trees
- iii. Scope notes (i)
- iv. Explode eg. exp asthma/
- v. Textword Searching

Problem 5: The search gives no articles, or too few (I)

- vi. Truncation and Wildcards * eg. Diabet$
- vii. Adjacency eg. Adj diabetes
- viii.Boolean 'OR'
- ix. PubMed Related Articles, Link out
  - Each citation in PubMed has a link that will retrieve a pre-calculated set of PubMed citations that are closely related to the selected article.
  - Click on Related Articles to the right of each citation to display the related set of articles. PubMed creates this set by comparing words from the title, abstract, and MeSH terms using a powerful word weighted algorithm.
  - Citations are displayed in rank order from most to least relevant, with the "linked from" citation displayed first.

Problem 6: You don't know where to start searching

- *Solution: Use the "permuted index" option.*
- 1 ptx stress
- **PTX Display**
  - *When using the PTX tool, enter ONE WORD to search. The resulting PTX Tool Page displays all of the terms in the Tree or Thesaurus containing the word you entered.*
  - *This helps you find similar terms.*
  - *In the example below, the word "blood" was entered; note that all the displayed terms contain the word "blood".*

**Problem 7: Limiting a set loses important articles but
 does not exclude those of low methodological quality**

- *Solution: Apply an EBQF (evidence based **quality
 filter).***
- **PubMed filter**

Problem 8: Medline hasn't helped

- *Solution: Explore other medical and paramedical
  databases.*
- i.   MEDLINE
- ii.   Cochrane Library
  - –Cochrane Database of Systematic Reviews (CDSR)
  - –Cochrane Controlled Trials Register (CCTR)
  - –Database of Reviews of Effectiveness (DARE)
  - –NHS Economic Evaluation Database
  - –Health Technology Assessment Database
- iii.   EMBASE
- iv.   CINAHL
- v.   PsycINFO
- vi.   ERIC (Education Resources Information Center)

SAVING SEARCH STRATEGIES AND RESULTS

- **OVID**
  http://www.hint.org.tw/cgi-bin/ovidweb/ovidweb.cgi
  - i.AutoAlert (SDI) Searches
    Selective Dissemination of Information   SDI
  - ii.http://www.pubcrawler.ie/ 'It goes to the library. You go to the pub.™
  - iii.'Here are your Ovid SDI results.
- **Pubmed Cubby**

5	1
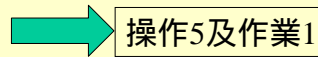
Other Searching Strategy

- **handsearching**
- **reference lists**
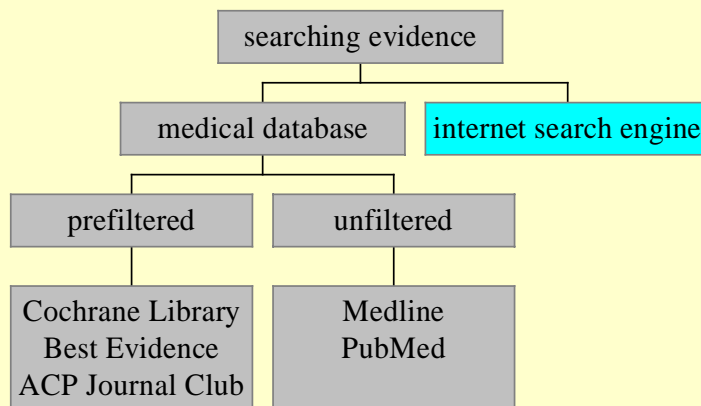- **direct contact with pharmaceutical companies/researchers**

PubMed

- **Help/ FAQ**
  http://www.ncbi.nlm.nih.gov/entrez/query/static/help/pmhelp.html

- **PubMed filter** → 6

Search evidence

```
                    searching evidence
                    ┌──────────┴──────────┐
            medical database      internet search engine
          ┌────────┴────────┐
      prefiltered        unfiltered
          │                  │
   Cochrane Library       Medline
   Best Evidence          PubMed
   ACP Journal Club
```
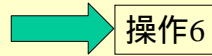
Textbooks and the Internet

- **Finding Answers to More General Questions: Textbooks and the Internet**

5. Meta Search

- MD consult
- TRIP database *(free)*
- SUM search *(free)*
- Dogpile *(General)*
- Mamma *(General)*
- ………..*more*

Meta Search Tools...

- Advantages:
  - Query can be run across multiple search engines
  - User needs to learn only the search interface of the meta search tool
  - Better results: retrieves top-ranking pages from individual search engines
- Disadvantages:
  - Unique features of individual search engines is lost
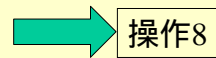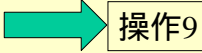 - Not exhaustive: use only top results returned by search engines

e-book

7

- www.freebooks4doctors.com/
- www.emedicine.com
- MEDLINEplus
  - A golden gateway to health information resources

- **HINT**
  http://www.hint.org.tw/cgi-bin/ovidweb/ovidweb.cgi
- **E mail**

8
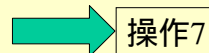
- **Try Google** 9
  http://www.google.com.tw/
  - + pdf
  - + doc

- **Recommend "Reference Manager" internet search**

Search Strategies

-
-
- **" the best evidence"**
- **MeSH**
-
-
-
-

"The extent to which beliefs are based on evidence is very much less than believers suppose."

- Bertrand Russell, *Skeptical Essays*, 1928
-

- Oxford Centre for EBM
  - http://www.cebm.net
- Canada Centre for health evidence
  - http://www.cche.net/che/home.asp
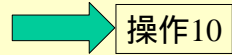
Reference
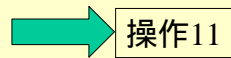
- **How to read a paper: the Medline database**
  http://bmj.bmjjournals.com/cgi/content/full/315/7101/180
- **New Zealand Guidelines Group (NZGG).**
  Handbook for the preparation of explicit evidence-based clinical practice guidelines, 2001.
  http://www.nzgg.org.nz/development/documents/nzgg_guideline_handbook.pdf
- **The Users' Guides to Evidence-based Medicine**,
  JAMA. (2000;283(14):1875-1879).

Thank You !!!