Searching for evidence – Evidence based resources and research databases

Juliet Marconi
Library & Knowledge Centre
Cairns Hospital
Introduction to searching for evidence

- Evidence based practice - introduction
- Formulating the research/clinical question using PICO(T)
- Searching EBP resources – eg Cochrane, Clinical evidence, Joanna Briggs
- Searching databases – systematic reviews, clinical trials, etc.
EB Practice

• Evidence based practice consist of following steps:

  1. Formulating an answerable question
  2. Searching for evidence to answer the question
  3. Critically assessing & interpreting the evidence
  4. Applying evidence to your practice / setting
  5. Evaluating effectiveness of your EB practice

In this session, Step 1 is covered briefly & most of the session is focussed on step 2
What is 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.

• The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research. By individual clinical expertise we mean the proficiency and judgment that individual clinicians acquire through clinical experience and clinical practice.”

What is evidence based practice?

• “The purpose of evidence-based practice is to **assist in clinical decision making.** To make informed clinical decisions, we need to integrate lots of pieces of information. As health professionals, we are typically very good at seeking information from our clients and their families and from the settings in which we work but, traditionally have not been as aware of information that we can gain from research. When Sackett and his colleagues refer to ‘evidence’, they clarify it by specifying ‘evidence from research’.

• So, although we need information from many sources, **evidence-based practice shows how research can also play a role in informing clinical decisions.”**

(FROM: Evidence-based practice across the health professions 2010, page 2 Chapter 1 Introduction to evidence-based practice.) Full reference on handout.
Further references...

• Further reading on Evidence Based Practice:

  1. Sicily statement of evidence based practice, BMC Medical Education 2005, 5:1
     http://www.biomedcentral.com/content/pdf/1472-6920-5-1.pdf


  3. Library EBP resources list online @
Levels of Evidence

- I-1  Systematic review of level II studies
- II   A randomised controlled trial
- III-1 Pseudo-randomised controlled trial
- III-2 A comparative study with concurrent controls (non-randomised experimental trials, cohort study, case-control study, interrupted time services with control group)
- III-3 Comparative Study without concurrent controls (historical control study, 2+ single arm studies, interrupted time series without a parallel control group)
- IV   Case series with either post-test or pre-test/post-test outcomes


(How to use the evidence: assessment and application of scientific evidence NHMRC)
From: http://www.ebmpyramid.org/index.php
CKN or CHHHS resources

Evidence information integrated with patient care systems – not yet available

- **Point of care tools** – BMJ Best Practice – Clinical Evidence, Dynamed & Isabel, Joanna Briggs, UpToDate, Clinical Guidelines, Clinical Key Nursing – EB Nursing monographs

- **EBP resources that synthesise systematic reviews** - eg can be found in ACP Journal Club

- **EBP resources that index or publish systematic reviews** – Cochrane, Pedro, OTSeeker, SpeechBite, PsycBite, TRIP, JBI, UTD

- **EBP publications** – eg ACP Journal Club

**Database searches** – eg Medline, CINAHL, Embase, Psycinfo, Austhealth, PubMed, etc
## Question & Type of Study

<table>
<thead>
<tr>
<th>Type of question</th>
<th>Ideal type of study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy</td>
<td>Randomised control trial RCT</td>
</tr>
<tr>
<td>Prevention</td>
<td>RCT</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Prospective, blind controlled trial comparison to gold standard</td>
</tr>
<tr>
<td>Prognosis</td>
<td>Cohort study</td>
</tr>
<tr>
<td>Etiology/Harm</td>
<td>RCT</td>
</tr>
<tr>
<td>Cost analysis</td>
<td>Economic analysis</td>
</tr>
</tbody>
</table>

*Meta-analysis & systematic reviews, when available, often provide best answers to clinical questions.

**Source:** From *Australian EBP Librarians’ Institute Perth 2014 (Participant workbook)*
An Answerable Question

Formulating your answerable question

PICO(T) format / tool

– Population or Patient
– Intervention or Indicator
– Comparison or Control
– Outcome

You may also want to consider – what

– Type of evidence
PICO(T) explained

- **Population** – Patient, population or problem
  Describe characteristics of your patient/s

- **Intervention, prognosis, exposure**
  Interventions, tests, patient exposure (eg tobacco, asbestos)?

- **Comparison of intervention**
  Alternative intervention/s being proposed?

- **Outcome**
  What outcome is expected for the patient / client

- **Type of evidence**
  Observational studies (eg case studies, cohort studies), experimental studies (randomised controlled trials), qualitative studies, systematic reviews, etc
PICO(T) Topic example 1

- **P** = people suffering chronic low back pain
- **I** = massage
- **C** = education, exercise or bed rest
- **O** = reduce incidence or severity of low back pain
- **T** = Systematic review, randomised control trials / clinical trials
Answerable question format

- In people with chronic low back pain (P)
- How does massage (I)
- Compared with education or exercise or bed rest (C)
- Effect incidence or severity of low back pain (O)
PICO(T) Topic example 2

- **P** = patients / clients with depression
- **I** = fish oils
- **C** = none
- **O** = manage depression / symptoms
- **T** = Systematic review, randomised control trials / clinical trials / case reports
Answerable question format

• Are fish oils (I) effective in treating patients/clients with depression (P)
  (no comparison)
Creating your search strategy

• Think about alternative words, eg:
  – Massage OR Deep tissue massage OR Neuromuscular massage
  – Education OR Patient education etc
  – Exercise OR Pilates OR Therapeutic exercise etc
  – Fish oils OR Omega 3 fatty acids
  – Depression OR Bipolar disorder OR Depressive disorders
Searching for evidence EPB resources

Searching... systematic reviews

Has your topic already been reviewed? Check:
– Cochrane, TRIP, Pedro, SpeechBite, OT Seeker, PsychBite, PubMed Clinical queries
– Clinical evidence, Joanna Briggs Institute, UTD, etc

Systematic reviews (1\textsuperscript{st} level of evidence)
– Review of randomised control trials (2\textsuperscript{nd} level evidence)
– Use a strict protocol/s (for conducting review)
– Present a summary of the evidence for intervention/s
Searching for evidence Databases

Searching... research databases

• If no reviews found in other EBP products. If your topic has never been reviewed.

Search:

• Medline, CINAHL (nursing & allied health)
• PsycINFO, Embase (pharmaceutical), etc

Look for publication type ‘limits’ (for summarised or primary research)

• Systematic reviews (review), Meta analysis, Meta synthesis
• Clinical trials – Randomised Control Trials (2\textsuperscript{nd} level of evidence)
• Pseudo RCT or comparative studies (3\textsuperscript{rd} level of evidence)
• Case Series (4\textsuperscript{th} level of evidence)
• Any research (primary studies or expert opinion)

Alternatively, add keywords / subjects (MeSH) for study types into your search, eg:
  Systematic reviews / meta analysis / randomised control trials, etc
Searching hints...

• Always keep search broad at beginning
• Think about alternative key words or topics
• For key word searching, think about word endings / beginnings / spelling (Br vs Am)
• Do each separate topic as individual searches then combine them
• Use OR to gather related words or synonyms
• Use AND to combine topics
• Apply ‘Limits’ at the end of your search
Appraising the evidence

LKC Searching for Evidence Guide

http://cairns.health.qld.libguides.com/searching-evidence

see Appraisal page (also includes implementation / evaluation info)

http://cairns.health.qld.libguides.com/searching-evidence/appraisal

Other useful web links and tools on Critical Appraisal:

• Curtin Uni critical appraisal websites
• University of South Australia critical appraisal tools links
• University of Oxford Centre for Evidence Based Medicine and Critical appraisal
• Macquarie University Critical appraisal guide
Cairns Hospital LKC services

• Literature searches conducted on your behalf (for work purposes)
• Training and coaching for literature / database searching (one to one, groups, formal programs, phone instruction with remote computer access, video conferencing)
• Document supply services (we track down articles for you) – emails must include payroll ID
• Don’t know where to start? Call or email us…
Cairns Hospital
Library & Knowledge Centre

- Tel. 07 4226 6679 (general)
- Fax 07 4226 6672
- Email: cairns_library@health.qld.gov.au
- Located at: Cairns Hospital, A Block, level 2, Esplanade

Library websites
- Search ‘Cairns Hospital Library’ QHEPS OR...
- http://cairns.health.qld.libguides.com