Access & Appraise: Using Advanced Search Features to Evaluate Results for Quality, Authority and Relevance

- What is the “best evidence?”
- What do I spend my time reading and appraising?
- Evaluating quality, authority and relevance

Barbara M. Sullivan, Ph.D.
NUHS Department of Research,
Evidence Based Practice
5 As of Evidence Based Practice

- Asking
- Accessing
- Appraising
- Applying
- Assessing
Evidence Based Practice in **Action** at NUHS

**Asking**

- Form a patient oriented clinical question using a searchable format
  - Information?
  - Evidence?
Evidence Based Practice in **Action** at NUHS

**Accessing**

- Search
- Identify
- Obtain
Evidence Based Practice in **Action** at NUHS

**Appraise**

- Evaluate – do I want to read this
- High Quality
- Authoritative
- Relevant
- Valid, Robust
- Applicable
Accessing the Best Evidence: the Treasure Hunt

- Browsing “Compiled Evidence Websites” for information
- Structured searching of biomedical literature databases
What are we looking for?
What are we looking for?

- High quality
- Peer-reviewed
- Authoritative
- Relevant
- Applicable
- Valid
- Accessible
- Evidence
What is the “best evidence?”

- Journal articles (papers) describing research studies
  - Secondary biomedical literature
  - Primary research studies
Secondary source literature

- descriptions of studies
- “best evidence:” filtered, reviewed, appraised, summarized
- prepared by someone other than the original researcher
- may be objectively or subjectively described
Primary research studies

- contain **subjects or patients** who are analyzed (not other studies)
  - not reviews, analyses, guidelines, economic analyses based on primary studies etc.
- written by the researchers who conducted the study
Evidence Based Practice begins with a patient and a patient oriented, clinical question

Patient scenario

James, 32 year old male, technical sales manager who drives long distances (or at least for long periods of time) and is a frequent flier for his job, has been visiting you for neck and back issues for over two years on a fairly regular basis. In addition to working from the car and plane, he has a home office and uses a laptop. You and he have discussed work place ergonomics as well as exercise and stretching to alleviate chronic neck and back pain.
Evidence Based Practice begins with a patient and a patient oriented, clinical question

On a recent visit, he tells you he heard on the TV news that chronic back and neck pain causes depression -- or was it vice versa? -- and that chiropractic and alternative care that relieves the pain can relieve depression. He asks, “Do you think that this neck thing could be causing me to feel blue lately? Or do you think mid-winter blues are causing this pain in my lower back and neck? My colleague just had lumbar disk surgery and feels great. I’m not so excited about surgery. Should we be doing something different?”

He says after hearing that news report, he’s been looking on the internet to see what might help with the chronic pain and lift his mood.
In addition to following up on the comment about “the blues” in order to determine if your patient is suffering from depression to a greater degree than he notes,

✓ you decide to find some of the information on depression and “the blues” your patient is reading...

✓ you also decide to find the report your patient described

✓ since you took the EBP courses at NUHS, you are confident you can search the current research literature for solid evidence for alternative therapies
**... starting to search for evidence with PICO**

Center for Evidence Based Practice [http://www.cebm.net/focus_quest.asp](http://www.cebm.net/focus_quest.asp)

<table>
<thead>
<tr>
<th>Patient, population, problem</th>
<th>Intervention</th>
<th>Comparison</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consider</strong> 32 yo WM / chronic neck pain / chronic back pain / lumbar disk / spine</td>
<td>CAM therapy chiropractic acupuncture “physical therapy” nonsurgical nonoperative botanical herbal, light</td>
<td>Prescription drugs surgery Massage... alternative therapy treatment</td>
<td>to treat / relieve (chronic, neck, back) pain and (mild) depression</td>
</tr>
</tbody>
</table>

**Question components**

- For \([P= \text{adult patients with chronic (neck / back / spine / lumbar) pain}]\), is \([I= \text{chiropractic / acupuncture / botanical / conservative / nonoperative treatment}]\) as effective as \([C= \text{surgery}]\) to \([O= \text{alleviate pain / treat mild depression symptoms}]\)?
MedlinePlus – “In the News” Health Care Topics
Starting an effective search

Go to the source your patient recalls ...

- [www.google.com](http://www.google.com)
- NBC 5 health
- Chiropractic, pain, depression
According to an overview of back pain from the National Institute of Health, the back is uniquely complicated. It is made up of dozens of bones, muscles and nerves, all of which must be in harmony. A slight strain in one muscle or a slight misalignment between two bones can constrict a nerve causing back pain.

Chiropractors such as Lederer take X-rays to ensure that patients’ spines are in need of realignment.

“What I see most often in the X-rays I take are spinal degeneration, osteoarthritis, degenerative disc disease or other conditions,” he said.

Treating The Pain

Surgery may be necessary for more serious cases of back pain, but Lederer emphasized that it is only an option after more conservative options have been exhausted. He cited a recent article in the Journal of the American Medical Association that showed back surgery and certain exercise programs yield about the same results.

Manipulation from a chiropractor is a much less drastic method for helping resolve the imbalance that causes the pain. Chiropractors go through years of training to learn how to adjust joints enough to restore a normal range of motion.

Spinal manipulation -- often accompanied by the "pop" of air being moved from a joint -- is not a full solution by itself. According to Lederer, "chiropractic care now and exercise later" is the best approach. He gives patients exercises to perform that will strengthen back muscles, and he also emphasizes the need for periodic adjustments.

Long-Term Solutions

Of course, if your job is contributing to your back problems, it may be necessary to change the conditions in which...
Follow a link to overview of back pain website:
Evaluating a website – see Resources

- What is the purpose of the site?
- Who runs this site?
  - Are there links to a home page or about us page that provide clear information about the publisher, authors, editors, professional organizations, institutions and sponsors?
- Who pays for the site?
  - The source of a Web site’s funding should be clearly stated or readily apparent.
  - Advertising, educational institution, government, grant, organizational dues?
- What is the basis of the information?
  - Does the site make health claims that seem too good to be true?
  - Does the information use deliberately obscure, "scientific" sounding language? (recent research studies show…)
  - Does it promise quick, dramatic, miraculous results? Is this the only site making these claims?
- Where does the information come from?
  - Are references and original sources provided?
  - Does the site rely on rely on testimonials?
  - Are the authors identified? What are the author(s) credentials?
- How is the information selected?
  - Does the site have an editorial board? Is the information reviewed before it is posted or published?
- How current is the information? Is it linked to current research publications, articles, databases?
- How does the site choose links to other sites?
- What information about users does the site collect. Why?
  - Is there a privacy policy
  - Is there a membership requirement? Is it a paid subscription?
- Can you contact the site management with questions, feedback and information?
- Are discussion boards monitored and reviewed?
Evaluating a website

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- Does it promise quick, dramatic, miraculous results? Is this the only site making these claims?
- Are the links and references to “research studies,” “clinical studies” or “proven scientific results” provided?
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Follow a link to a research article: http://jama.ama-assn.org/cgi/content/abstract/296/20/2451

**Journal:** quality, authority

**Title:** relevance

**Authors:** authority

**Study Site:** relevance

**Summary (abstract):** relevance
How do I know which journal articles are worthwhile?

Journal
Title
Author
Site
Summary (Abstract)
• 5 second evaluation
• Go or No-go
• Essential to start the full Critical Appraisal
• Demonstrate efficiency: you’ll need the skill for the clinic and professional practice
JTASS

Journal

Understand and appraise the quality of the journal.

Answer and understand:

– Is it peer-reviewed?
– Is it indexed? If indexed, where is it indexed?
– Why is it important that journal articles be peer-reviewed and indexed?
– Are you familiar with this journal?
Peer review of journal articles

- Prior to publication in a journal, articles go through rigorous review
- “Peers” review and provide constructive criticism
- Before accepted for publication, peers have to be satisfied with the article
- Only 5% of articles are accepted for publication on the first submission
Peer review of journal articles in PubMed

- Click on journal link to see if journal is indexed in MEDLINE
- MEDLINE journals are peer-reviewed
- Not all peer-reviewed journals are indexed in MEDLINE
- Click on journal link to go to journal website; check “about us” or similar website link
Peer review of journal articles in EBSCOhost

- Most databases list journal titles link on “Select Database” page
- CINAHL contains a list of peer-reviewed journals
Peer review of journal articles in EBSCOhost

- Click search result titles >> click specific journal link >> look for info
Title
- How much information is available in the title alone?
- Is it potentially interesting or possibly useful in your practice?
- Are key PICO words present? Logically used?
- Why or why not?

Are chronic low back pain outcomes improved with co-management of concurrent depression?

➤ Evaluate the title of the article relative to patient & PICO
➤ Don’t just copy the title down.
JTASS: Author(s)

Make a determination regarding the quality of the authors.

- Publication history
- Track record: careful, thoughtful work
- What areas of expertise do the authors bring to this study?
- Indications of methodological and/or statistical expertise?
- How can you find out more about the authors?
  - Display the abstract or citation
  - In abstract view Click on “author” link
  - in PubMed or EBSCOhost to display other publications
  - www.scirus or Google
Site

Compare the **site where the study was conducted** to your practice.

- not the website or database where you found the article
- Not the authors’ institution
JTASS Site

Compare the site where the study was done to your practice.

- **Where** is the site?
- Is the site considered primary, secondary, or tertiary care?
- Is the site *sufficiently similar* to your own that results, if valid, would apply to patients in your practice? (Patient values, customs)
  1. Is your access to the required facilities, expertise and technology sufficient to allow you to implement the interventions described in the article?
  2. Are the patients seen in the facility where the article was written likely to be similar to your patients in disease severity, treatment, age, sex, race or other key features that have an important bearing on clinical outcomes?
- In areas where the site is not similar, what are the potential consequences as to how you will interpret the results?
JTASS: Summary (Abstract)

• Brief description of the study placed at the beginning of the article
  – ~100-300 words
  – organized

• Includes research question, objective(s), methods (briefly), results (briefly), study implications
JTASS: Summary (Abstract)

Determine which aspects noted in the abstract

• ... are clinically important to you. Why?
• ... are relevant to your PICO
• Look for clinical applicability
• Assess patient / population description
• Assess intervention. Relevant?
• Note outcomes and measurement (if any).
Summary (Abstract)

Determine which, if any, of the results in the abstract are clinically important to you and why.

- Summarize the relevant aspects (patient, methods, measurements, outcomes, results, etc.)
- in your own words
In all reality, what do you look at first?

1. Title of the article to see if you are interested / relevance
2. Conclusion of the abstract to determine the bottom line of this study
3. Remainder of the abstract to determine
   - Relevance to PICO
   - Study design
   - Potential flaws
4. Journal and authors for reputation and recognition
5. … and only then do most people start to read the full text
Where to find information for JTASS Evaluation

1. Journal link
2. Author links
3. Site of authors vs. site of study (see abstract).
4. Author contact (e-mail)
5. “Summary” Abstract
6. Access the full text

Clicking on the title at the results Summary view leads to the Abstract Plus view.
Journal  Understand and appraise the quality of the journal.
• Is it peer-reviewed? Is it indexed? If indexed, where is it indexed?
• Why is it important that journal articles be peer-reviewed and indexed?
• Are you familiar with this journal?

Title  Be able to evaluate the title.
• How much information is available in the title alone?
• Is it potentially interesting or possibly useful in your practice?
• Why or why not?

Author(s)  Make a determination regarding the quality of the authors.
• Is the track record of the authors (if you know it) one of careful, thoughtful work that has stood the test of time?
• What areas of expertise do the authors bring to this study? Is there any indication that methodological and/or statistical expertise was utilized for this study?

Site  Compare the site in this study to your practice.
• Where is the site? Is the site considered primary, secondary, or tertiary care?
• Is the site sufficiently similar to your own that its results, if valid, would apply to patients in your practice?
  1. Is your access to the required facilities, expertise and technology sufficient to allow you to implement the maneuver(s) described in the article?
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Summary (Abstract)  Determine which, if any, of the results in the abstract are clinically important to you and why.
• Assess patient / population description, intervention,
• Note outcomes.
Starting an effective search armed with your PICO

- Key words, simple text search:
  - Chiropractic depression // chiropractic neck pain // neck pain depression
  - chiropractic depression neck pain

✓ Abstract Plus view
✓ JTASS
✓ Date: too old?
PubMed Single Citation Matcher

To get started with PubMed, enter one or more search terms.

Search terms may be topics, authors or journals.

Set up an automated PubMed update in fewer than five minutes.

1. Create a My NCBI account.
2. Save your search.
3. Your PubMed updates can be e-mailed directly to you.

Read the My NCBI Help material to explore other options, such as automated updates of other databases, setting search filters, and highlighting search terms.

PubMed is a service of the U.S. National Library of Medicine that includes over 17 million citations from MEDLINE and other life science journals for biomedical articles back to the 1950s. PubMed includes links to full text articles and other related resources.

Barbara M. Sullivan, Ph.D. Dept. of Research NUHS 2008
PubMed Single Citation Matcher: Related Articles
PubMed Single Citation Search Results: Check related articles
PubMed >> Search Results >> Details Tab
EbscoHost on campus link:
(NUHS home > Student Services > LRC > databases > Via EbscoHost login)

http://search.ebscohost.com/Community.aspx?lp=login.asp&ref=http%3a%2f%2fwww.nuhs.edu%2fs
how.asp%3fdurki%3d216&authtype=ip&ugt=723731963C8635173776355632353E5226E36D36013699361E3

EbscoHost off campus: http://search.epnet.com/
Use NUHS LRC Passwords document
Login Info: User ID: s9817535 Password: password
Select Multiple databases or one per search
one database per search: use of controlled vocab & benefits
EBP@NUHS Study and Practice Guide:

Ch. 4: Access & Appraise - Evaluating Information and Evidence for Quality, Authority and Relevance (JTASS)

Guided Search (Advanced Features) and JTASS Evaluation Lab