Building & Strengthening Your Evidence Based Practice Literature Searches

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Outline of Evidence-Based Workshop

In this workshop you will learn how to:

- Define Evidence-Based Practice and determine the scope of EBP literature and levels of evidence
- Quickly identify Evidence-Based Resources from the Mount Carmel Health Sciences Library (MCHSL) Nursing Resources page
- Build a P.I.C.O.(T.) framework using effective clinical questions (i.e., diagnosis, therapy, prognosis, etiology) and identify the best study designs/publication types, i.e., systematic reviews, meta-analyses, randomized controlled trials (RCTs) of the literature
- Search appropriate databases (i.e., CINAHL, ClinicalKey for Nursing, Cochrane Database and PubMed) to find Evidence-Based Practice literature relevant to your P.I.C.O.(T.) topic
- Use database search filters to locate and access the best EBP literature including original research and systematic reviews of the literature
- Utilize the customized EBP Guide from the Nursing Resources page to assist in developing your knowledge and understanding of the Evidence-Based Practice process
Evidence-based practice is a systematic, problem-solving approach used in making clinical decisions. As the diagram illustrates, **EBP** is the integration of **Clinical Expertise**, **Patient Values** and **the Best Evidence** in order to consistently improve the quality of patient care outcomes.
Evidence-Based literature can be visualized using a pyramid: The higher level (less-biased) evidence is closer to the top of the pyramid. This type of literature is also referred to as Level I-II type evidence. Ideally, you want to find high level studies in your literature searches.

**Level I-Systematic reviews of the Literature**: A synthesis of evidence from all relevant randomized controlled trials.
If searching for high level research on a topic and you find very little in the literature, the best evidence could actually be obtained from a consensus of experts or cohort studies. Not all Evidence-Based questions can be effectively answered with a rigorous systematic review or meta-analysis.

Keep in mind that EBP literature also encompasses lower level studies such as controlled trials without randomization; cohort studies (level III) case-control (Level IV) or expert opinion/consensus (Level V).

If high level studies are difficult to find, do not ignore the less rigorous studies in your searches.

**Level I** - Systematic review or meta-analysis: A synthesis of evidence from all relevant randomized controlled trials

**Level II** - Randomized controlled trial: An experiment in which subjects are randomized to a treatment group or control group

**Level III** - Controlled Trial without Randomization; Cohort study: an observation of a group(s) (cohort[s]) to determine the development of an outcome(s) such as a disease

**Level IV** - Case-control or cohort study Case-control study: a comparison of subjects with a condition (case) with those who don’t have the condition (control) to determine characteristics that might predict the condition

**Level V** - Expert opinion or consensus - Authoritative opinion of expert committee
Evidence-Based Practice Resources are available from the Mount Carmel Health Sciences Library (MCHSL) Nursing Resources page at https://library.mchs.com/nurses

The Nursing Resources page has links to databases that index Evidence-Based Practice literature including CINAHL, ClinicalKey for Nursing, Cochrane Database of Systematic Reviews and PubMed. Each of these databases have unique search options for identifying EBP research articles in PDF full-text.
Before Searching: Building a P.I.C.O.(T.)

P.I.C.O.(T.) questions are the foundation blocks for improving search results. Before searching for Evidence-Based Literature, use a **PICOT** to build your topic into a searchable and answerable question.

- **P** - Patient or population
- **I** - Intervention
- **C** - Comparison
- **O** - Outcome
- **T** - Time element (Not always appropriate)

Intervention is just one type of Evidence-Based question. Others include: Prognosis, Diagnosis, Etiology, and Meaning.
The P.I.C.O.(T.) Question Grid

Use The P.I.C.O.(T.) grid before searching the literature. This strategy will create a “blueprint” to help you plan the construction of a well-built clinical question.

<table>
<thead>
<tr>
<th><strong>P</strong>- Patient population or problem</th>
<th>What patient population or problem are you trying to address?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I</strong>- Intervention/ therapy or issue of interest</td>
<td>What will you do for the patient or problem?</td>
</tr>
<tr>
<td><strong>C</strong>- Comparison with another intervention or issue</td>
<td>What comparison have you chosen? i.e., no treatment, different type of treatment?</td>
</tr>
<tr>
<td><strong>O</strong>- Outcome of interest</td>
<td>What will be improved for the patient or problem?</td>
</tr>
<tr>
<td><strong>T</strong>- Time (Not always appropriate)</td>
<td>Duration of intervention?</td>
</tr>
</tbody>
</table>
Start to plan a **P.I.C.O(T.)** before searching the literature. The example below is a scenario that can be used to construct a well-built clinical question.

**Clinical Scenario:** An adult patient who will soon have total knee arthroplasty (replacement) surgery recently read an article on the internet that mentioned something about “early mobility” or “ambulation” after surgery. The article stated that the sooner a patient could get out of bed, the quicker he could leave the hospital with better long-term recovery. He asked you if what he read is true and if there is any substantial research backing up this claim.
Based on the patient scenario, begin to frame the P.I.C.O.(T.) by choosing elements that most accurately represent the topic. Once you have chosen the elements, it is easier to construct a well-built clinical question that is focused and answerable.

**Population:** Total Knee arthroplasty (replacement) patients

**Intervention:** Early mobility or ambulation

**Comparison:** Standard bed rest

**Outcome:** Reduced length of stay/better long-term recovery

**Time:** Length of stay in hospital

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**What patient population or problem are you trying to address?**

**What will you do for the patient or problem?**

**What comparison have you chosen, i.e., no treatment, different treatment?**

**What will be improved for the patient or problem?**

**What will be the duration of the intervention?**
Determining the best type of PICO(T.)

For this PICOT example the type of question is an **Intervention**. Remember that there are other types of questions including **Prognosis**, **Diagnosis**, **Etiology** and **Meaning**. Before conducting any Evidence-Based Project use a template to determine the best PICOT question to help guide your search for the most relevant EBP literature.

**Template for Asking PICOT Questions**

**INTERVENTION**
In ________ (P), how does ________ (I) compared to ________ (C) affect ________ (O) within ________ (T)?

**THERAPY**
In ________ (P), what is the effect of ________ (I) compared to ________ (C) on ________ (O) within ________ (T)?

**PROGNOSIS/PREDICTION**
In ________ (P), how does ________ (I) compared to ________ (C) influence ________ (O) over ________ (T)?

**DIAGNOSIS OR DIAGNOSTIC TEST**
In ________ (P) are/is ________ (I) compared with ________ (C) more accurate in diagnosing ________ (O)?

**ETIOLOGY**
Are ________ (P), who have ________ (I) compared with those without ________ (C) at ________ risk for/of ________ (O) over ________ (T)?

**MEANING**
How do ________ (P) with ________ (I) perceive ________ (O) during ________ (T)?

Adapted from the PICOT Questions Template, Ellen Fairesso-Oxenholb, 2006. This form may be used for educational & research purposes without permission.
Once you have chosen the elements that make up your PICOT and determined the best type of PICOT question, it is a good strategy to write it down in order to focus on the main points.

**P**opulation: Total Knee arthroscopy (replacement) patients

**I**ntervention: early mobility or ambulation

**C**omparison: standard bed rest

**O**utcome: length of stay/improved long term recovery

**T**ime: hospital duration

*In Total Knee arthroplasty (replacement) patients is early mobility/ambulation more effective than bed rest for reducing patient length of stay in the hospital and better long-term recovery?*
Constructing a Search in CINAHL

In Total Knee arthroplasty (replacement) patients is early mobility/ambulation more effective than bed rest for reducing patient length of stay in the hospital and better long-term recovery?

The CINAHL database can be accessed from the Nursing Resources page located on the Mount Carmel Health Sciences Library website.
In Total Knee arthroplasty (replacement) patients is early mobility/ambulation more effective than bed rest for reducing patient length of stay in the hospital and better long-term recovery?

The CINAHL database will find articles containing ALL 3 elements when you use the AND connector.

With your PICOT question built, enter the elements separately into the CINAHL Advanced search boxes. To find high-level and original research check the Research Article Limiter before conducting a search for articles.
Search results in CINAHL

After searching the elements of your PICOT, click on a relevant title to view a Detailed Record (Abstract) and how to access the full-text article.

1. Continuous femoral nerve block using 0.125% bupivacaine does not prevent early amb
   Beebe, Michael J; Allen, Rachel; Anderson, Mike B; Swenson, Jeffrey D; Peters, Christopher L; Clinical Orthopaedic research (ISSN: 0009-921X PMID: 23857316 PMCID: PMC3971238)
   Subjects: Anesthetics, Local Administration and Dosage; Arthroplasty, Replacement; Knee Adverse Effects; Bupivacaine; Nerve Block Methods; Postoperative Pain Prevention and Control; Adolescent: 13-18 years; Adult: 19-44 y
   Times Cited in this Database: (1)

2. An enhanced recovery after surgery program for hip and knee arthroplasty.
   Christelis, Nicholas; Wallace, Sophie; Sage, Claire E; Babitu, Uate; Liew, Susan; Dugal, James; Nyulasì, Ibolya; Mul 202(7): 363-368. 6p. (Journal Article - research) ISSN: 0025-729X PMID: 25877118
   Subjects: Arthroplasty, Replacement, Hip Rehabilitation; Arthroplasty, Replacement, Knee Rehabilitation; Postoperatively Aged, 80 & over; Middle Aged: 45-64 years; Female; Male

3. The impact of analgesic modality on early ambulation following total knee arthroplast
   Perlas, Anahi; Kirkham, Kyle R; Billing, Rajeev; Tse, Cyrus; Brull, Richard; Gandhi, Rajeev; Chan, Vincent W S; Reg Article - research (ISSN: 1098-7339 PMID: 23759708)
   Subjects: Analgesia Methods; Anesthetics, Local Administration and Dosage; Arthroplasty, Replacement, Knee A
   Control: Aged: 65 years; Middle Aged: 45-64 years; Female; Male
Detailed Records are very helpful when you need to find a collection of articles on your P.I.C.O.T. They save you time by providing valuable information about the scope of a particular article and whether or not it meets the selection criteria of your EBP topic.

For articles that are not immediately available in PDF full-text, there is a Full-Text Finder link. If the library does not have the article you need, there is another option called Interlibrary Loan, in which you can request an article and have it delivered to your email address.

Look for high level research such “Double Blind” studies to reduce research bias. They are often in the form of Randomized Controlled Trials (RCTs).

Scan Detailed Records for Major and Minor Subjects and use them as additional search terms. These are also known as CINAHL Headings, which are standard nursing terms indexed throughout the CINAHL database.
Interlibrary Loan in CINAHL

If an article is not in the electronic journal collection simply fill out an Interlibrary Loan Form (ILL Form) and it will be emailed to you in PDF full-text format, usually in less than 24 hours.
Constructing a Search in ClinicalKey for Nursing

From the Nursing Resources page there is a link to ClinicalKey for Nursing.

ClinicalKey for Nursing is designed for nurses who need to find Evidence-Based Literature quickly and effectively. The point-of-care features provide efficient searches to high level resources including Nursing Guidelines, Systematic Reviews, and Evidence Based Nursing Monographs.
Searching ClinicalKey for Nursing

Enter several elements from your P.I.C.O.(T.) topic into the single search box and then click search. The search results page includes a left side bar menu that filters by source types, including Systematic Reviews (Level I-II) and Randomized Controlled Trials (RCTs).

ClinicalKey® for Nursing

Once you have entered several PICOT elements and searched the literature there is a left sidebar menu with filters to sort by publication types. Selecting “Systematic Reviews” and “Randomized Controlled Trials” is an effective way to quickly locate Level I and Level II EBP literature.
Accessing articles in ClinicalKey for Nursing

Articles in ClinicalKey for Nursing link to full-text PDF documents.

- **MEDLINE®**

  Early mobilization of patients who have had a hip or knee joint replacement reduces length of stay in...

  Clinical rehabilitation.
  Guerra, Mark L; Singh, Parminder J; Taylor, Nicholas F. Published September 1, 2015.

- **MEDLINE®**

  Multidisciplinary rehabilitation post joint replacement at the hip and knee:
  The Cochrane database of systematic reviews.
  Khan, F; Ng, L... Show all. Published January 1, 2008.

- **FULL TEXT ARTICLE**

  Femoral and sciatic nerve blocks as postoperative analgesia. A systematic review of randomized controlled trials.
  International Journal of Orthopaedic and Trauma Nursing.
Constructing a search in the Cochrane Database of Systematic Reviews

From the Nursing Resources page there is a link to the Cochrane Library.

The Cochrane Library includes the Cochrane Database of Systematic Reviews of the Literature. The database indexes comprehensive literature reviews on many topics with an emphasis on Intervention studies. Each review includes a substantial reference list of original research studies that are very helpful when gathering source material for an EBP project or paper.
In Total Knee arthroplasty (replacement) patients is early mobility/ambulation more effective than bed rest for reducing patient length of stay in the hospital and better long-term recovery?

To improve search results in the Cochrane Database select “Search All Text” and enter several PICOT elements in the single search box. Cochrane Systematic Reviews are available for downloading in PDF full-text format.
From the Nursing Resources page there is a link to PubMed (Medline).

PubMed is the largest biomedical database in the world and includes a very helpful search filter for quickly identifying high level (Level I and II) Evidence-Based literature. Once connected to PubMed there is a link to the “Clinical Queries” search filter.
PubMed’s Clinical Queries

From the PubMed home page there is a category called PubMed Tools with a link to the Clinical Queries search filter.
Enter several PICOT elements into the single search box and select the appropriate clinical study category. For this PICOT the best type is a Therapy category. After searching, a result list will include links to high level Systematic Reviews of the literature in PDF full-text format.
If an article is not available in full-text when searching the library's databases or through the Interlibrary Loan Request form, there is another option called, Request Article(s) located under Library Services on the MCHSL website. Fill out and submit the form and the article will be sent to the email of your choice.
On the Nursing Resources page there is a link to a separate source called the EBP Guide. It includes a comprehensive overview of the steps of Evidence-Based Practice as well as helpful tools such as PICOT examples and multimedia videos. Use this guide at any time and at your own pace to learn the fundamentals of EBP, including links to helpful resources for strengthening your knowledge of Evidence-Based Practice.
V Before searching databases for Evidence-Based literature build a PICOT so that your topic is clearly defined and focused. (A good time saver too!)

V Use a question grid or template to identify the type of PICOT question to ask: Is it a Diagnosis, Therapy, Prognosis, Etiology type of question? (i.e., what do you want to accomplish for the patient or what is the intended outcome?)

V Write out your PICOT to help you determine the best elements to use to search the databases.

V Search for high level (Level I and Level II) publication types, i.e., systematic reviews, meta-analyses, randomized controlled trials (RCTs) of the literature. (If there are none or very few high level studies on your topic use lower levels of evidence to answer your PICOT question)

V Use database search filters advantageously to locate the best EBP literature including original research and systematic reviews of the literature, i.e., Clinical Queries filter in PubMed and Source Types in ClinicalKey for Nursing.

V Utilize the customized EBP Guide from the Nursing Resources page to assist in developing your knowledge and understanding of the Evidence-Based Practice process.
Thank you for attending: Building & Strengthening Your Evidence-Based Practice Literature Searches

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