Evidence-based – Searching - Nursing - Practice - Medicine

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Objectives

- To define Evidence-Based Practice
- To understand that there is a process to systematically search the literature to find the best available evidence
- Using PICOT: develop an answerable question, build a literature search, evaluate the evidence
- To identify evidence-based practice resources and learn how to use them efficiently and effectively

What is Evidence based practice?

Evidence-based practice (EBP) is a life-long problem-solving approach to the delivery of health care that integrates the best evidence from well-designed studies and integrates it with a patient’s preferences and values and a clinician’s expertise, which includes internal evidence gathered from patient data.

(Melnyk, Gallagher-Ford, Long, & Fluor-O’Toole, 2014)
What areas of nursing practice might we want to ask EBP questions about?

<table>
<thead>
<tr>
<th>Question Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assessment</td>
<td>how to properly gather and interpret findings?</td>
</tr>
<tr>
<td>2. Causes of the problem</td>
<td>how to identify them?</td>
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<tr>
<td>3. Deciding what the problem is</td>
<td>where the symptoms/signs indicate a range of possible problems how do you decide which is most likely?</td>
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<tr>
<td>4. How to select and interpret tests used to identify problems and to monitor patient progress?</td>
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<tr>
<td>5. How to estimate the likely clinical progression of a condition/illness and any likely complications?</td>
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<tr>
<td>6. How to select interventions that do more good than harm and that are worth the effort and cost of doing them?</td>
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<td>7. How to reduce the chance of the problem reoccurring or how to promote health?</td>
<td></td>
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<tr>
<td>8. How to keep up to date; improve your skills; and run a more effective/efficient nursing team?</td>
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</table>

The Seven Steps of EBP

- **Step 0:** Cultivate a spirit of inquiry along with an EBP culture and environment
- **Step 1:** Ask the PICO(T) question
- **Step 2:** Search for the best evidence
- **Step 3:** Critically appraise the evidence
- **Step 4:** Integrate the evidence with clinical expertise and patient preferences to make the best clinical decision
- **Step 5:** Evaluate the outcome(s) of the EBP change
- **Step 6:** Disseminate the outcome(s)

(Melnyk & Fineout-Overholt, 2011)

**4 Steps to Searching**

1. Design an answerable question
2. Determine the type of question that you are posing
3. Determine the type of study that will best answer your question
4. Search and evaluate the literature
Designing an Answerable Question

A well-built clinical question should have 4 components. The **PICO model** is a helpful tool that assists you in organizing and focusing your question into a searchable query. Dividing into the PICO elements helps identify search terms/concepts to use in your search of the literature.

**PICO**

- **P** – population/patient/problem (among_______)
- **I** – intervention (does _________)
- **C** – comparison/control (versus _________)
- **O** – outcome (affect _________)

**PICO Model**

- **P =** Patient/Population
  - Who/age group/gender/health concern
  - Example: for persons entering a health care facility…

- **I =** Intervention or Exposure
  - therapeutic/diagnostic/preventive/health care management strategies
  - Example: for persons entering a health care facility, is hand rubbing with a waterless, alcohol-based solution, …

**PICO Model cont’**

- **C =** Comparison of Interest
  - Comparison against intervention/?more than one or no intervention
  - Example: for persons entering a health care facility, is hand rubbing with a waterless, alcohol-based solution, as effective as standard hand washing with antiseptic soap…

- **O =** Outcome of Interest
  - Desired outcome/patient affected or not affected by intervention
  - Example: for persons entering a health care facility, is hand rubbing with a waterless, alcohol-based solution, as effective as standard hand washing with antiseptic soap for reducing hand contamination?
Designing an Answerable Question

Clinical scenario:
Our patient is a 45-year old female who is experiencing moderate depression. After surfing the web, she believes St. John’s Wort will cure her symptoms with less risk than conventional antidepressant medications.

- **P**: adults experiencing (moderate) depression
- **I**: St. John’s Wort
- **C**: antidepressants
- **O**: relief of symptoms

Clinical Question

- For adult patients with moderate depression, is St. John’s Wort more effective for symptom relief than antidepressants?

PICO (TT) Model for Clinical Questions

<table>
<thead>
<tr>
<th>P</th>
<th>Patient, Population, or Problem</th>
<th>How would I describe a group of patients similar to mine?</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Intervention, Prognostic Factor,</td>
<td>Which main intervention, prognostic factor, or exposure am I considering?</td>
</tr>
<tr>
<td>C</td>
<td>Comparison to intervention</td>
<td>What is the main alternative to compare with the intervention?</td>
</tr>
<tr>
<td>O</td>
<td>Outcome to measure or achieve</td>
<td>What can I hope to accomplish, measure, improve, or affect?</td>
</tr>
<tr>
<td>T</td>
<td>What type of question asking?</td>
<td>Therapy/Treatment, Diagnosis, Prognosis, Harm/Etiology (or “domains” in PubMed)</td>
</tr>
<tr>
<td>T</td>
<td>Type of study you want to find</td>
<td>What would be the best study design/methodology?</td>
</tr>
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Clinical Scenario #1

On morning rounds in the Oncology unit, a first year student turns to you for consultation. She wants to discuss options for managing moderate nausea and vomiting that result following chemotherapy. She shares an experience a relative had taking ginger when prochlorperazine didn’t provide effective relief and asks for your input.

What is your clinical question in PICO format?

Answer Clinical Question #1

PICO:

- P – In patients receiving chemotherapy who are experiencing moderate nausea and vomiting
- I – is the use of ginger
- C – as effective as prochlorperazine
- O – in reducing nausea and vomiting?
Clinical Scenario #2

Working on the Developmental Assessment Team for school-aged children of mothers who used cocaine during their pregnancy, you are interested in learning the developmental outcomes for these children as they begin school compared to children not exposed to cocaine during pregnancy.

What is your clinical question in PICO format?

Answer Clinical Question #2

PICO:
• P – (controlling for confounding factors) Do school-aged children
• I – exposed in utero to cocaine,
• C – compared to children not exposed to cocaine
• O – have increased incidence of learning disabilities at age six years?

Limits of PICO

This model works best for Therapy/Treatment & Diagnosis questions
Remember, PICO is a model, not a rigid structure
Sources of Evidence
Original research and reviews published in journals

The Cochrane Library
- Intl organization makes available systematic reviews of effects of healthcare interventions
- Up-to-date

PubMed/CINAHL
- Free provided by NLM
- MUN access

UpToDate
- Evidence based clinical info
- Quick and easy/point of care

Using PubMed
- Go to: www.library.mun.ca/hsl
- Under Research Tools choose HSL Databases
- Click on PubMed under Top Picks

PubMed Home

MeSH database – medical thesaurus
Search Statement

PubMed Mesh terms:
- Depression
- Hypericum
- “Antidepressive Agents”

Depression AND (hypericum OR “St. John’s Wort”) AND “antidepressive agents”

Search Statement

Does hand washing among healthcare workers reduce hospital acquired infections?
PubMed Mesh terms:
- Hospital acquired infection – Cross Infection
- Hand washing – Hand Disinfection
- Nurses - Nurses OR Nursing

"cross infection" AND "hand disinfection" AND nurses

How to save results

To temporarily save and print results:
1. Click the check box to the left of the citations you want to save.
2. From Send to, select Clipboard.
3. Click Add to Clipboard
4. Click Clipboard: # items to choose citations
5. Click Send to, select File - Format: Abstract(text) Create File
6. Under File select Print
Remember

- Pick out PICO
- Select appropriate databases
- Do search
- Evaluate your research