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The Evidence Based Practice Question Development & Search Tips Checklist (Revised)

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Evidence Based Practice Question Development & Search Checklist

☐ **Problem / Issue / Initial Question:**
If you have an idea/solution in mind, what problem are you addressing?

_____

_____

☐ **Why is this a problem? What data / measures or evidence / practice observations could be used to show this is an issue/problem?** *(Internal Evidence)*

_____

_____

☐ **Describe current practice related to your problem. Include any key observations, processes in place such as audits, checklists, EMR documentation, etc. relevant to the problem.**

_____

_____

☐ **Is there an established way of addressing this problem that is based on evidence?**

☐	**Talked with nurse manager, nurse clinician, educator, or director.**	☐	**Checked for available hospital and/or unit procedures / policies / protocols**
☐	**Talked with hospital / subject matter experts (SME)**	☐	**Checked for practice guideline:** ☐ ECRI Guidelines Trust ☐ TRIP Database ☐ Professional Organizations. *(ex. AORN, AACN)* ☐ Scientific Societies *(ex. American Heart Assoc., American Cancer Soc)* ☐ Point of Care Tools (*ex. Up to Date, Clinical Key*) ☐ US Preventative Services Task Force
☐	**Checked for systematic review/meta-analysis** ☐ PubMed/Medline or OVID MEDLINE ☐ EMBASE ☐ CINAHL ☐ Cochrane Database of Sys. Rev. ☐ EMBASE		

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https://guides.library.vcu.edu/nursing

Evidence Based Practice Question Development & Search Checklist

☐ **Identify Subject Matter Experts and Those Affected by the Potential Initiative or Project (Stakeholders)**

May need to talk with these people or departments for insight or to find evidence, also may be potential teammates. Recommend documenting who you spoke to, when, the topic discussed and what was learned.

_____ _____

_____ _____

☐ **Consider the Appropriateness of the Question (Feasibility)**

Things to consider when it comes to the potential initiative or project. The answers to these questions need to be identified to ensure success.

☐	**Is the problem/issue/topic within the scope of nursing practice?** If the answer is no, you will need to team with those who are part of the clinical practice. If unable, it is best to find another topic to pursue if attempting to launch an EBP project/initiative.
☐	**What hospital patient safety goal or initiative does the problem align with?** Identify the specific goal/initiative: _____
☐	**Time** How much time do you think is needed to explore this topic through to implementation? Do you and your team have the time to devote to exploring this topic and following through on implementation? Is there a hospital resource or team that you could partner with to maximize your time?
☐	**Resources** Does the organization have the tests, equipment, and other resources that will be needed for this intervention to be implemented?
☐	**Cost / Return on Investment (ROI)** What do you expect the costs of the practice change to be as well as what are the potential cost savings for the organization?
☐	**Team Identified** Have you identified individuals to assist you with this initiative/project? Does this group represent perspectives of more than one discipline if your topic is one that affects other disciplines? Be sure to get a commitment that those identified are willing to assist. _____ _____ _____ _____

Evidence Based Practice Question Development & Search Checklist

Constructing Your Clinical Question

Start with a background question (broad) and move towards a foreground question (focused – PICO format)

Background Question

Provides general information that enables one to gain a greater understanding and allows one to understand the options or possibilities when it comes to addressing a topic Tend to have two components: A question root (who, what, when, etc.) with a verb followed by a disorder, test, treatment, etc.

_____

_____

Foreground Question – The Clinical Question

A focused question that asks something specific in order to make an informed clinical decision or action. Should not be directional.

_____

_____

Question Templates for Asking PICOT Questions

Intervention

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

ETIOLOGY

Are_____ (P), who have _____ (I) compared with those without _____(C) at _____ risk for/of _____(O) over _____(T)?

DIAGNOSIS OR DIAGNOSTIC TEST

In _____(P) are/is _____(I) compared to _____(C) more accurate in diagnosing _____(O)

PROGNOSIS / PREDICTION

In (For) _____ (P), how does _____ (I) compared to _____(C) influence _____ (O) during/over _____ (T)?

MEANING

How do _____ (P) with _____ (I) perceive _____ (O) during _____(T)?

Melnyk, B. M., & Fineout-Overholt, E. (2011). Evidence-based practice in nursing & healthcare: A guide to best practice. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins

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☐ **Searching the Literature & The PICO Format. (*External Evidence*)**

P (Problem, Patient, Population, Program)	I (Intervention)	C (Comparison) What You are Doing Now	O (Outcome)	T (Type of Question)	T (Type of Study)

The Type of Question Can Determine Type of Studies Needed:
Always want a **clinical practice guideline**, **systematic review** or **meta-analysis** when possible. Most of the time you will find only primary studies.

Type of Question	Best Type of Evidence / Study
Intervention/Therapy: How well do interventions or treatments work in respect to an outcome. May address harm, viability, or cost.	Randomized Control Trial (RCT) or Systematic/Review Meta-Analysis of RCTs
Prevention: How to prevent a disease or condition	RCT/ Cohort Study / Case Control / Systematic Review / Meta-Analysis
Prognosis / Prediction: How to estimate the patient's likely clinical course over time and anticipate the likely complications of the disease or condition.	Cohort Study / Case Control / Case Series or Case Report / Synthesis or Cohort or Case Control Studies / Meta-Synthesis
Diagnosis or Diagnostic Test: How to select what mechanism or diagnostic tests to most accurately determine outcome.	Blind RCT Compared to Gold Standard (Best Treatment or Test) / Systematic Review / Meta-Analysis of RCTs
Etiology: Identify factor, process, condition that is associated or correlated with an outcome or disease.	RCT / Cohort Study / Case Control / Meta-Synthesis
Meaning: How an experience influences an outcome, the phenomena or health care.	Meta-Synthesis / Qualitative Studies
Cost Analysis: Economic costs of all facets of a intervention or disease treatment.	Economic Analysis.

Users' guides to the medical literature A manual for evidence-based clinical practice (2008). In Rennie D. (Ed.), McGraw-Hill Medical: McGraw-Hill Medical: New York.

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Search Terms / Concepts:

PICO Components	Primary Search Terms	Alternative Terms
P		
I		
C		
O		

Possible Limits to Apply:

Gender:

____ Male

____ Female

Species:

____ Humans

____ Animals

Age Groups: (May Differ Between Databases)

____ All Ages

____ Newborn (< 1 month)

____ Infant (1 - 23 months)

____ Pre-School (2 - 5 yrs.)

____ Child (6-12 yrs.)

____ Adolescent (13-18yrs.)

____ Adult (19 - 44 yrs.)

____ Middle Aged (45-64 yrs.)

____ Elderly (65 - 79 yrs.)

____ Aged (> 80 yrs.)

Languages:

English Only

Other Languages _____

Years Covered:

Last 5 Years

Last 10 Years

Year Range _____to _____

Known Authors or Researchers in the Field:

Citations Found That are Related to the Topic:

Useful Keywords or Subject Headings by Database:

If you find a good article, search for it in PubMed, CINAHL or another database that has a controlled vocabulary and see how it is indexed. This will allow you to find terms that may be useful to find more articles on the same topic.

Database #1: _____	Database #2: _____	Database #3: _____

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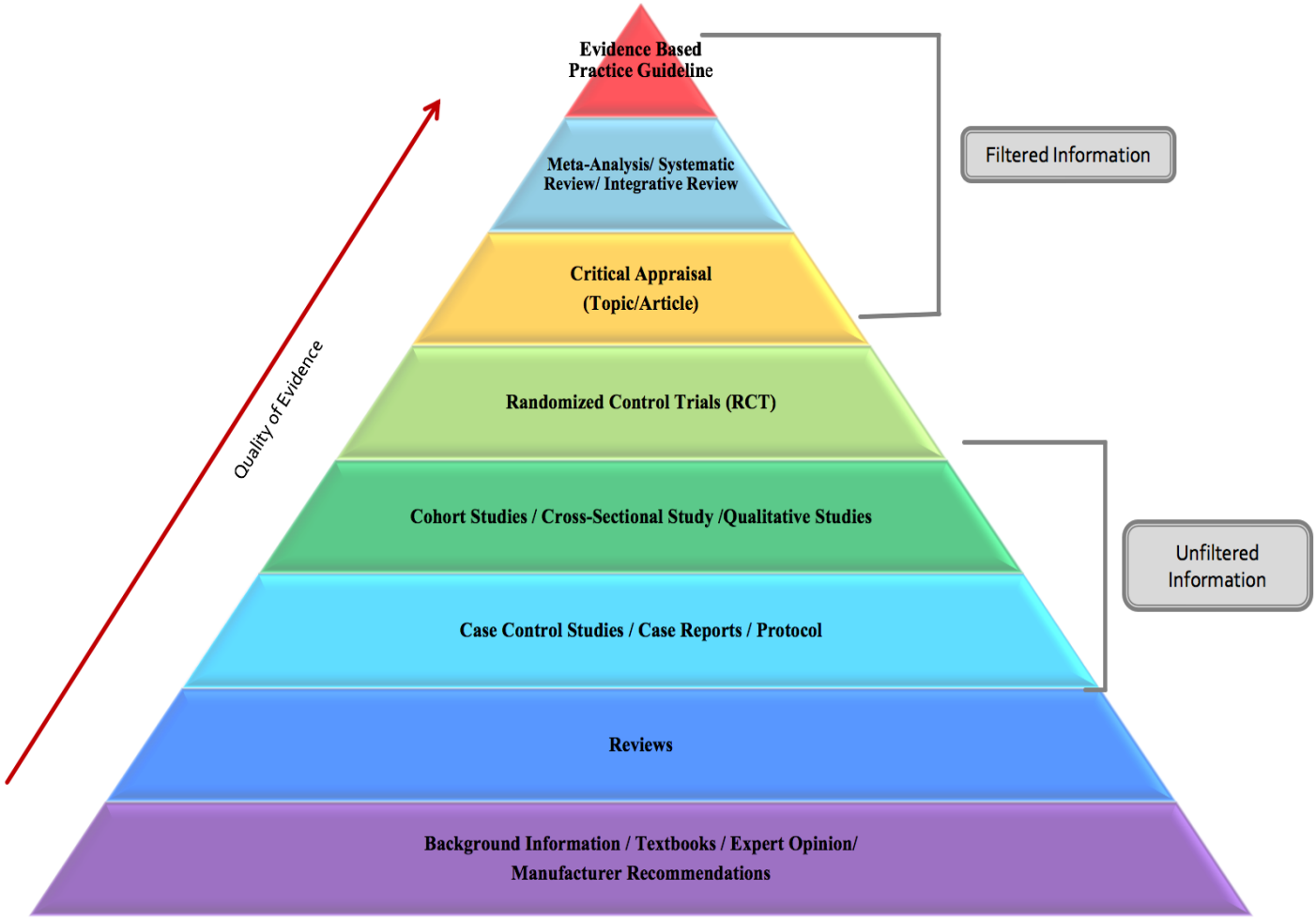
EBP Evidence Pyramid

Try to find evidence towards the top of the pyramid and work your way down.



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☐ Appraisal of the Evidence Found – Is There Enough?

Appraising the evidence when it comes to EBP ideally, should be done as team with more than one person appraising each article or piece of evidence. Each person has a unique perspective based on their knowledge and experience, which may result in varying strengths regarding evidence appraisal.

Proceed with Evidence Based Practice Project / Question	
☐ Yes	• **Questions / Assistance:** Contact Your Nurse Clinician, Nurse Manager or the Department, Council or Committee that Supports EBP. • **Next Steps:** o Finalize Team Members & Schedule Meetings o Assess translation of evidence into practice setting o Gather Pre-Intervention / Pre-Project Data o Create Action Plan to Implement Change o Implement Change on a Small Scale (Pilot Project) o Evaluate Pilot and Determine if Ready for Full Scale Change o Implement Practice Change o Gather Post Intervention / Project Data o Report Results to Decision Makers o Adopt Change & Identify Next Steps o Disseminate – Poster, Paper, Presentation
Proceed with Research Project	
☐ No	• **Next Steps:** o Contact the Department, Council or Committee that Supports Research. o Find or Be Assigned a Mentor o Identify Resources Needed and Funding Options o Formulate IRB Proposal and Submit for Approval o Implement Research Protocol o Collect and Analyze Data o Determine Impact or Outcome(s) of the Study, Potential for Translation, and Identify Next Steps. o Disseminate – Poster, Paper, Presentation

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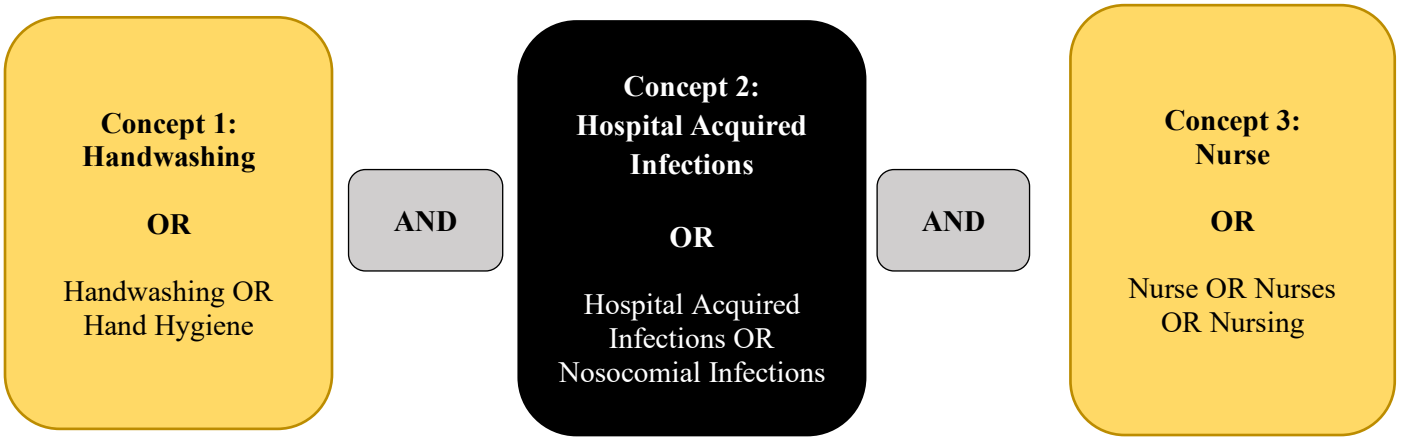
Basic Rules of Doing a Good Search

Keep in Mind: Search comprehensiveness is determined by information need.
(*Patient Care v. School Assignment*)

1) Break Search into Concepts

- Easier to manipulate your search to get desired results.
- Start with two most important concepts from your question.
- Combine with Boolean operators - ***AND, OR, NOT***



2) Come up with Alternative Terms or Concepts for Your Topic

- Databases = Different Audiences
- Remember: Terms people use are based on background / perspective / education/ profession
- Sources for alternative terms:
  - Index/Entry Terms of Subject Headings
  - Terms from Related Articles
  - Google Scholar

	Concept/ Term	Synonyms/ Related Concepts (Other Ways to Describe)
Concept/ Term #1		OR
AND		
Concept/ Term #2		OR
AND		
Concept/ Term #3		OR

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3) Use Subject Heading When Possible *(Advanced Searching Skill)*

- PubMed – Medical Subject Headings (MeSH)
- Embase – Emtree (Embase Subject Headings)
- CINAHL – CINAHL Headings
- Useful Tools:
  - ***MeSH on Demand:*** https://www.nlm.nih.gov/mesh/MeSHonDemand.html
  - ***Yale MeSH Analyzer:*** http://mesh.med.yale.edu/

	Advantages	Disadvantages
Controlled Vocabulary (Subject Heading)	• May provide terms that can broaden or narrow search • Accounts for most common synonyms • Retrieve all items in database indexed under the topic	• Recently coined terms may not have a subject term assigned • Can be difficult to find if no list of subject terms is included in the database
Keyword	• Retrieve synonyms, jargon, new or distinctive words • Identify relevant articles quickly to find appropriate controlled vocabulary	• May retrieve irrelevant articles • Your search must account for synonyms and alternative terms

4) Start Your Search Broad and Then Focus

- Use Limits/Filter of the Database *(Publication/Study Types, Language, Gender/Sex, Etc.)*
  - Start at the Top of the Evidence Pyramid and Work Down
- Add an Additional Concept or Term

Finding Too Many Articles? Ways to ***Decrease/Focus*** Your Results	Not Finding Enough? Ways to ***Expand/ Increase*** Your Results
• Utilize limits to English language, human subjects, review articles, time period searched (*last 5 years*), etc. • Add an additional term or concept • Do not explode • Restrict subject heading to major focus or major heading • Choose any relevant subheadings	• Add additional synonyms • Explode subject headings whenever possible • Do not restrict subject headings to major focus/heading • Do not choose subheadings • Consider searching back in time, look at citations of relevant article found.

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5) Always Search at Least Two Databases – *Unique Articles in Each Database*

Provide different ways to access existing literature on a topic and may find evidence in one database using terminology that would not be found in another database.

PubMed	**PubMed:** Contains biomedical literature. Good place to search when the question is medical in nature or when you are not sure where to start.
EMBASE	**Embase:** Contains biomedical and pharmacological literature. Good place to search when it comes to medical, pharmacology and toxicology topics or questions.
CINAHL Available via EBSCOhost	**CINAHL (Cumulative Index of Nursing and Allied Health):** Contains nursing and allied health literature. Good place to search when questions fall within the scope of nursing and allied health practice.
American Psychological Association PsycINFO	**PsycInfo:** Contains psychological literature. Good to search when the question addresses psychology or psychiatry topics.
Cochrane Library	**Cochrane Library:** Resource that contains several different databases, one of those being the database of systematic reviews. Good place to search when searching for systematic reviews, economic evaluations and randomized controlled trials.
ERIC Institute of Education Sciences; EBSCO Education Research Complete	**Education Resource Information Center or Education Research Complete:** Contain educational research. Good places to search when your question addresses educational topics.
Business Source Complete; ProQuest ABI/INFORM	**Business Source Complete or ABI/Inform:** Contain business, management and economic research. Good places to search when your search address management, economic or business topics.
EBSCO Academic Search Complete	**Academic Search Complete:** Contains publications covering social science, education, psychology, and other subjects. Contains academic journals, magazines, and publication formats. A good place to search for general topics on an assortment of subjects.
Clarivate Web of Science™	**Web of Science:** Contains information about the basic sciences, social sciences, the arts and humanities. Contains journal articles, reviews, meeting/conference abstracts, books chapters and other types of publications.

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Google Scholar: Indexes the full text of scholarly literature across an array of publishing formats like journal articles, theses, and preprints from various disciplines. The publications come from:

- Selected Academic Publishers
- Selected Professional Society Publishers
- Preprint Repositories
- Universities / University Repositories
- Scholarly Articles Available Across the Open Web / Open Access Articles

- **Should never be sole resource searched.**
- **Good place to start to get an idea of what may be out there on a topic and identify some potential useful articles.**
- **Always Best to Use a Discipline Specific Database (PubMed, CINAHL, etc.)**

Advantages	Disadvantages

• **Easy to Use:** Interface similar to Google and can provide many relevant articles
• **Find Related Articles:** "Cited By" feature allows one to find a list of related articles in Google Scholar that have cited the identified article.
• **Strongest in Science & Technology Articles:** This is a result of pulling citations from or partnerships with:
  ○ **PubMed:**
  ○ **Cambridge Scientific Abstracts**
  ○ **IEEE**
  ○ **OCLC's (Online Computer Library Center) Open WorldCat**
• **Patents and Legal Documents:** Can find patents and legal documents but is not exhaustive for either.
• **Citation Format:** Can click on ( ) under the title of the article to get citations in MLA, APA, or Chicago style.
	• **Not Able to Search Comprehensively:** Resource lacks the ability to easily focus your search. Can only limit by date with no ability to limit by publication type, language, sex or other useful filters found in discipline specific databases.
	• **Current Articles Don't Always Appear First:** The resource uses an algorithm that considers ***relevancy***, ***recency*** and ***citation counts*** when returning search results. This results in the most recent articles not being displayed first. Can be addressed some by limiting by year.
	• **Does not Define Scholarly Sources:** Google does not release the parameters considered when a source is determined to be scholarly or not. Individual evaluation of sources found will be key.
	• **No Alert When Changes are Made:** When changes are made to the resource there is no alert or information as to what resources or features have been added or taken away. This prevents one from being able to replicate searches over time.

Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, scopus, web of science, and google scholar: Strengths and weaknesses TheFASEB Journal : Official Publication of the Federation of American Societies for Experimental Biology, 22(2), 338-342. doi:10.1096/fj.07-9492LSF

Vine & Rita. (2006). Google scholar Journal of the Medical Library Association, 94(1), 97–9.

Google Scholar – Wikipedia - https://en.wikipedia.org/wiki/Google_Scholar

What is Google Scholar? · University of Minnesota Libraries - https://www.lib.umn.edu/faq/5341

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Reasons for Differences in Searches

Word Choice

Background / Education / Perspective / Profession

How Terms are Combined

Boolean Operators - AND / OR / NOT

- OR: More; ANY of your search terms can be present in the resulting records.
- AND: Less; ALL search terms must be present in the resulting records.
- NOT: Narrow; Exclude words/concepts from your search.

Databases Searched

PubMed/MEDLINE or OVID MEDLINE
Biomedical/Medical Topics

Embase
Biomedical/Medical and Pharmacological Topics

CINAHL
Nursing and Allied Health Topics

Different Word or Term Options

Use of Quotation Marks = Exact Phrase Searching

Singular or Plural
Nurses v. Nurse

Truncation (*)
Nurs* = Nurse, Nurses, Nursing
Be Cautious When Using!

Compound Words
Together or Separate
"Handwashing" or "Hand washing"

Use of Limits / Filters
Put on After Combining Terms

Field of Citation Searched
Title, Abstract, etc.

Subject Headings
MeSH, Emtree, CINAHL Headings, etc.

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Notes:

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