

Evidence Based Public Health (EBPH): Finding, Using, and Applying EBPH to your Public Health Programs

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Welcome Activity

- As you come into this session please think about the following question.
 - What is evidence based public health and why is it important in public health practice?
- As you think of an answer please go to <https://uwyo.padlet.org/dbrown80/what-is-evidence-based-public-health-to-you-tj2nb9n7xfrfvc5l> via the QR code on the right and click on the + button at the bottom right to add your thoughts.



SCAN ME



SCAN ME



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Agenda

Overview of National Library of Medicine (NLM), Network of the National Library of Medicine (NNLM) and the Regional Medical Libraries (RML's).

Definitions and overview of Evidence Based Public Health

Tools (some free) you can use to find Evidence for your public health programs and initiatives.

Questions and Answers



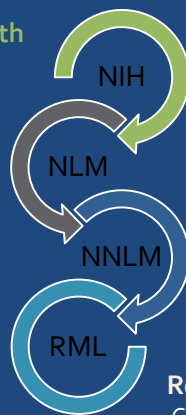
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National Institutes of Health

Nation's research agency
27 institutes and offices

Network of the National Library of Medicine

Program of the NLM comprised of 7 Regional Medical Libraries (RMLs) and 4 offices



National Library of Medicine


World's largest
biomedical library

Regional Medical Libraries

Coordinates NNLM activities in
designated regions



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The mission of NNLM is to advance the progress of medicine and improve public health by:

- Providing all U.S. health professionals with equal access to biomedical information.
- Improving the public's access to information to enable them to make informed decisions about their health.

<https://nlnm.gov>

NIH National Library of Medicine
Network of the National Library of Medicine

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Products and Services Offered by NNLM Region 4

- **Training opportunities (some offer public health CE)**
- **Small funding opportunities (up to \$5000)**
- **Professional Development Funding**

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Question Debrief

- What is evidence based public health and why is it important in public health practice?
- <https://uwyo.padlet.org/dbrown80/what-is-evidence-based-public-health-to-you-tj2nb9n7xfrfvc5l>



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What is Evidence-Based Public Health(EBPH)?

- **EBPH is a problem solving approach to public health practice. It integrates the conscientious use of best evidence in combination with a clinician's expertise as well as patient preferences and values to make decisions about the type of care that is provided.**



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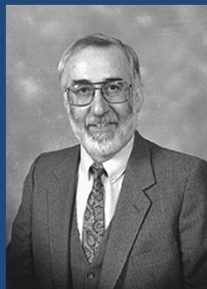
Evidence-Based Practice

- Requires integrating practitioner expertise with the best evidence from systematic research. [someone must be doing research]
- Involves finding and selecting resources that are credible, relevant, and applicable to practice. [how unique is your community?]

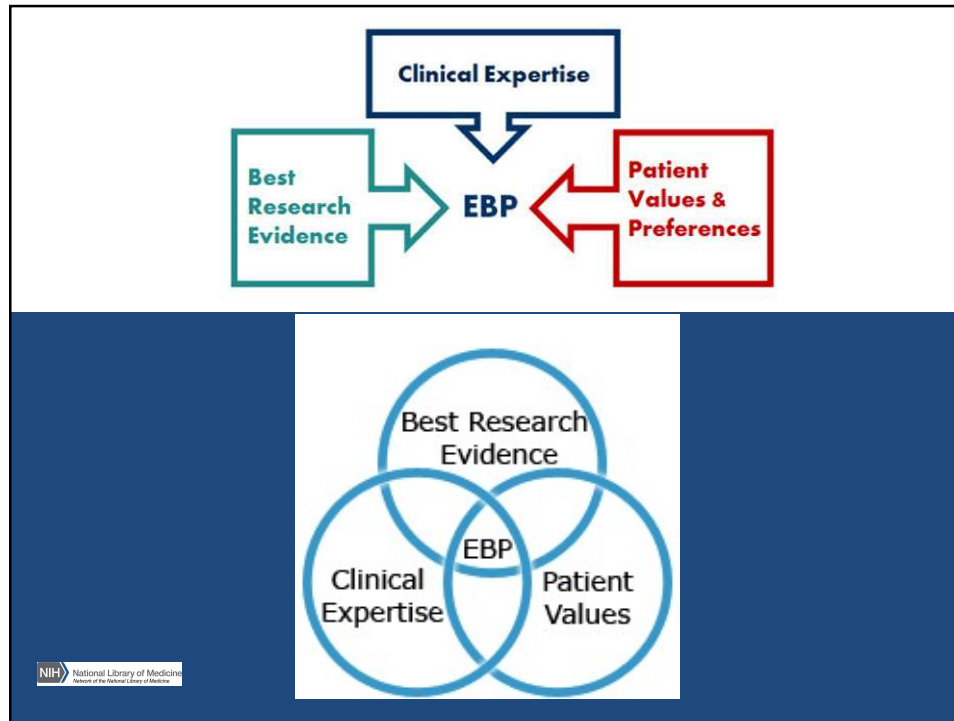
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David Sackett (1934-2015)

- Was a Physician in both the US and Canada
- Considered the “father of evidence based practice”
- Developed the first model for EBP



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Johns Hopkins Nursing Evidence Based Practice Model

- In 2005 a group of nurses at Johns Hopkins University developed a model for EBP.
- This model is in its fourth iteration and a book is available for purchase.
<https://www.sigmamarketplace.org/johns-hopkins-evidence-based-practice-for-nurses-and-healthcare-professionals-fourth-edition>
- This model provides good strategies to help with the EPB process.

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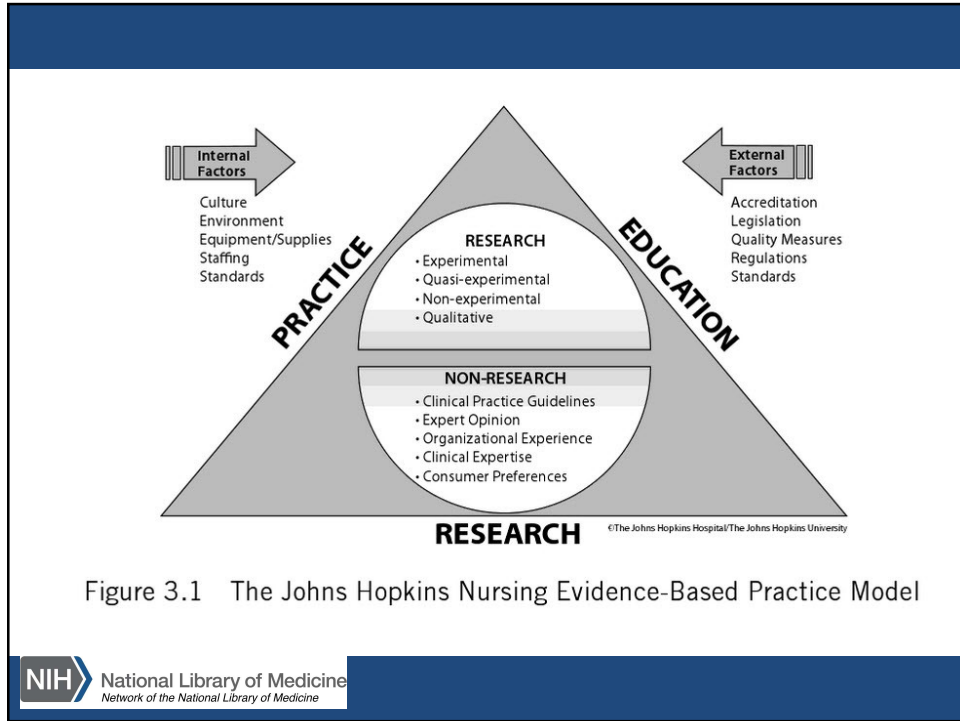
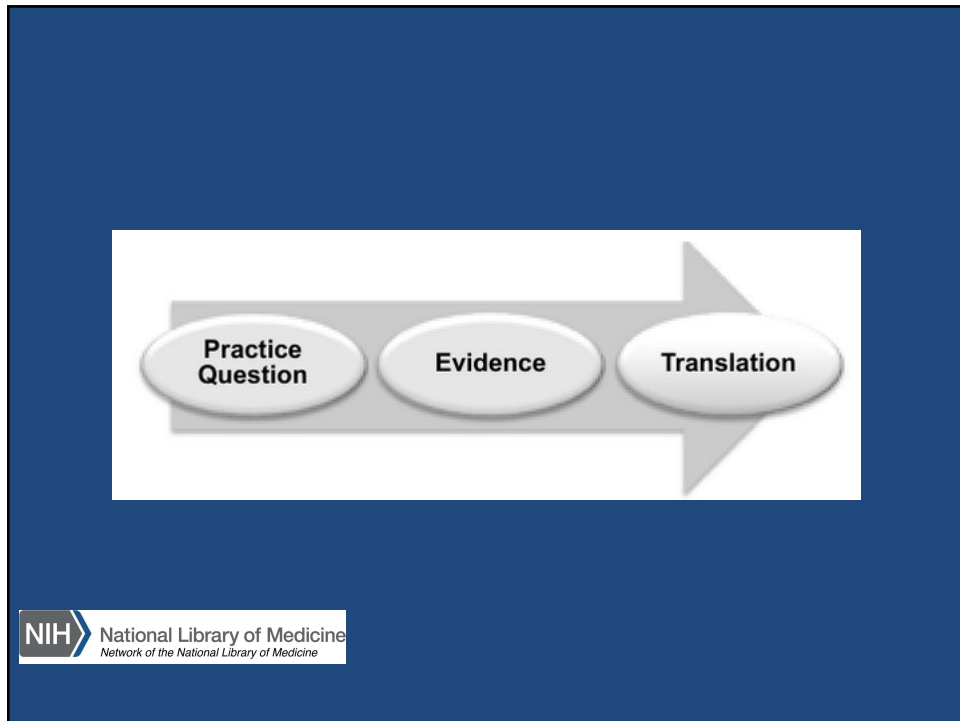


Figure 3.1 The Johns Hopkins Nursing Evidence-Based Practice Model

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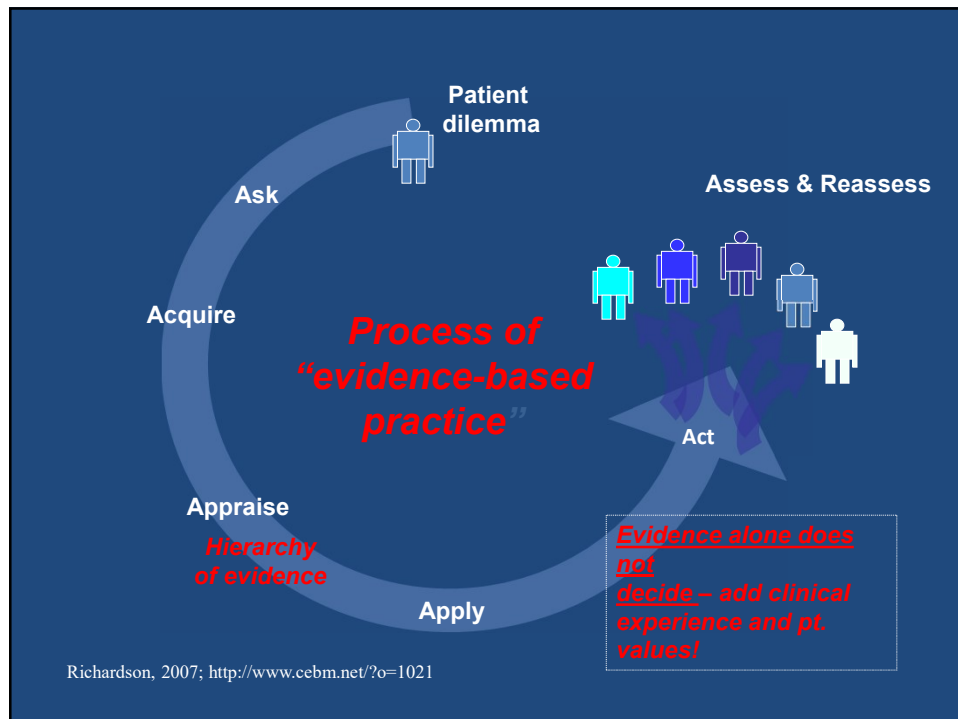
Getting Started: The Five A's*

- **Ask** quality clinical question
- **Acquire** best evidence
 - Enough evidence to answer question?
- **Appraise** that evidence (level/strength)
 - Is evidence strong?
- **Apply**
 - Does evidence support practice change?
 - Can practice change be implemented?
- **Assess/Re-assess**
 - How did practice change impact outcomes?

**Modified from Duke University's "The Five A's of the Evidence Cycle" available at:
<https://sites.duke.edu/ebmworkshop/files/2012/06/evidencecycle.pdf>



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Questions that arise in public health practice:

- Which program is most effective?
- Which social determinants predict better or worse outcomes?
- Which program is most effective and will produce the best community outcome outcome?
- If you do not do an intervention on a public health problem, what might be the outcome?

PICO(T)

- PICO(T) is an acronym that is used when developing literature search strategies.
- P stands for patient, problem or population
- I stands for intervention of interest
- C stands for comparison
- O stands for outcomes
- T stands for time

Population/Problem(P)

- Consideration of the population/problem of interest
- Limit to age group or subgroup if possible

Intervention (I)

- Exposure
- Treatment
- Perceptions
- Testing

Comparison (C)

- Could be true control, such as placebo or doing nothing
- Could be another intervention
- Sometimes it is the standard approach

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Outcome (O)

- Outcome may be very specific, e.g. death
- Outcome may be something that has a variety of measures, e.g. social mobility, social status, access to services etc.

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And sometimes time frame (T)

- We can set a limit of exposure or intervention eg. 6 months.
- We can set a post test date.
- We can look within a certain time period for a historical study.



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Sample PICO(T)'s

- How do first-time mothers (P) of premature babies in the NICU (I) perceive bonding with their infant (O) during the first month after birth (T)?
- Does monitoring blood glucose 4 times a day (I) improve blood glucose control (O) in people with Type 2 diabetes (P) during the first six months after being diagnosed with the condition (T)?



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Sample PICO(T)'s

- Is a yearly mammogram (I) more effective in detecting breast cancer (O) compared with a mammogram every 3 years (C) in women under age 50 (P)?



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Activity 2 Identify the PICO(T) question

- In adults (18-60) is social distancing or vaccination more effective in preventing the spread of a communicable disease during a pandemic?
- For children ages 5-12 is diet or exercise more important for weight control?
- How do college students using an app feel about depression?



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Types of Evidence

- External Evidence:
 - Generated from rigorous research
 - Important question: **Does the evidence generated by rigorous research still hold true when translated to the real world?**
- Internal Evidence:
 - Generated from outcomes management;
 - “practice-based evidence” (PI/QI/QA) projects
- Other Sources:
 - Text books, expert opinion, professional organizations



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Searching for the Best Evidence: Searchable Databases

- CINAHL
- MEDLINE: (PubMed)
- Cochrane Library
- Agency for Healthcare Research and Quality:
www.ahrq.gov/clinic/cpgsix.htm
- National Institute of Nursing
<http://ninr.nih.gov/ninr>



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Sample Search Pathway



1. Evidence-Based Guidelines
2. Systematic Reviews
3. Pre-formulated Searches
4. Best and Model Practices
5. Bibliographic Databases
6. Medical Journals
7. Health Data and Statistics
8. Legislation and Policy
9. Government Reports

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Sources of Health Science Evidence

- Journal literature
- Books
- Conference proceedings & abstracts
- Dissertations & theses
- Unpublished scientific papers
- Government reports
- Policy statements, laws & regulations
- Surveillance data
- Newsletters
- Teleconferences & webcasts
- Alert systems
- Email discussion lists
- Internet sources
- Expert knowledge & opinion

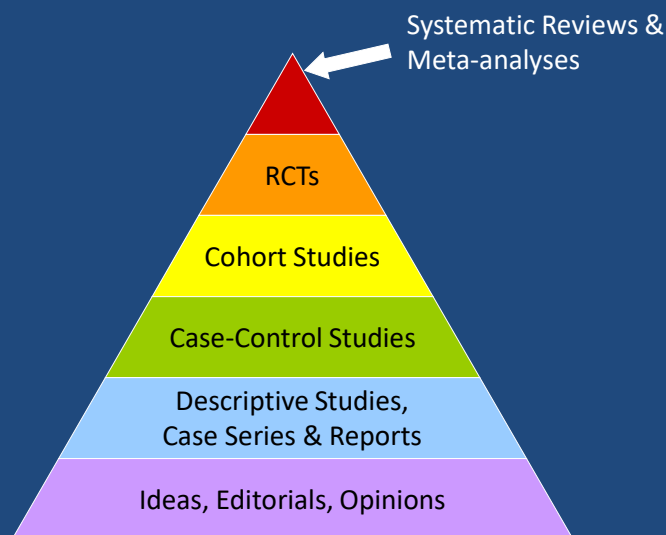
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Rating System for Evidence

- Level I: evidence from systematic review, randomized control trials (RCTs), or evidence-based reviews
- Level II: evidence from one well-designed RCT
- Level III: evidence from well-designed studies without randomization
- Level IV: evidence from other types of studies including case-control and cohort studies
- Level V: evidence from systematic reviews of descriptive and qualitative studies
- Level VI: evidence from one descriptive or qualitative study
- Level VII: evidence from the opinion of authorities and/ or reports of expert committees
- Meynyk, B. & Fine-Overholt, E.. (2005). Evidence-Based Practice in Nursing and Healthcare. Lippincott, Williams & Wilkins.

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Evidence Pyramid



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Critical Appraisal of Evidence

- Does this item address the question? [Are the population and intervention similar enough to be useful]
- Is this item quality evidence?
- Always better to appraise full-text
- Realistically, most make the first cut by appraising the abstract (or executive summary)

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Cochrane Library

- Access to Cochrane Database of Systematic Reviews:
– <http://www.thecochranelibrary.com> (Free to search and get abstract; full-text review may be available from your library)

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MEDLINE / PubMed

- Access (free): <http://www.pubmed.gov>
- Also available through multiple vendors
- Coverage: 1950 – present (moving backwards as well) ; journal and newsletter literature
- 4300+ journals in biomedical science, nursing, allied health, psychology, etc..



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MEDLINE Sample Search

- Are needle exchange programs effective for reducing HIV transmission in intravenous drug users? What are the characteristics of successful programs.
- MeSH
 - Needle-Exchange Programs
 - HIV Infections/transmission or /prevention & control



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Cochrane Search Sample

- **Is pneumococcal vaccination effective in reducing the number of ear infections in children? Is it worthwhile to promote it for otherwise healthy children in your community?**
- Search Terms (Keywords or MeSH)
 - Pneumococcal Vaccines
 - Otitis Media /prevention & control
 - Age group (children) – since this is a small database you might be willing to leave out the age group and just browse.



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PUBMED PICO search tool

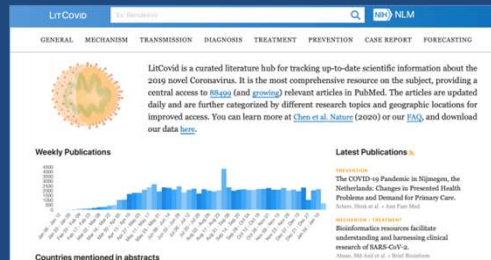
- <https://pubmedhh.nlm.nih.gov/nlmd/pico/piconew.php>

Also available as an app in the android app store under PUBMED for handhelds.



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LitCOVID



<https://www.ncbi.nlm.nih.gov/research/coronavirus/>

LITCOVID is a service from the NLM to provide curated information about COVID 19.



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NLM Resources for Health Services Research and Public Health

- The NLM provides specific research queries and resources for Public Health and Health Service Researchers. To explore more you can visit <https://www.nlm.nih.gov/hsrph.html>

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5 Critiques of EBP

1. Is completely empirical and assumes that scientific observations can be made independent of the theories and biases of the observer.
2. The definition of evidence within EBP is narrow and excludes information important to clinicians.



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5 Critiques of EBP continued

3. EBP is not 'evidence-based' because it does not meet its own empirical tests for efficacy.
4. The usefulness of applying EBP to individual patients is limited.
5. EBP has been criticized for reducing the autonomy of the public health/community relationship by limiting the community the right to choose what is best in their circumstances.



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Why Evidence-Based Practice?

- So much information, too little time
- Need high quality, filtered information to make informed decisions
- Value of scientific knowledge for decision making
- Decisions should not be based only on intuition, opinion or anecdotal information

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Questions?

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Thank You!

