ASPEN RESEARCH TOOLKIT – THE BASICS

Name Your Project: Research, EBP, or QI, Oh My!

Ann-Marie Brown, PhD, CPNP-AC/PC, CCRN, FCCM
Associate Clinical Professor, Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA

Peter Adintori, MS, RD, CDN
Clinical Research Dietitian, Memorial Sloan Kettering Cancer Center, New York, NY

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Learning Objectives

Upon completion of this session, the learner will be able to…

1. Compare and contrast the definitions of research with Evidence Based Practice (EBP) and Quality Improvement (QI)
2. Compare and contrast the workflow of research with Evidence Based Practice (EBP) and Quality Improvement (QI)

2

It All Starts With a Question

- All 3 kinds of projects start with a clinical question.
- While you will learn more about creating a measurable question in the next module, the **PICOT** approach is often used
  - **P** – population of interest
  - **I** – the intervention
  - **C** – the comparison or control group
  - **O** – the primary outcome to be measured
  - **T** – the time of interest

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Ask

Question Type	Patient, Problem, or Population	Intervention or Exposure	Comparison or Control	Example Outcome Measures
Therapy (Treatment)	disease/condition	therapeutic measure (medication, surgery, lifestyle change, etc.)	standard of care, other intervention, or placebo	mortality rate, length of stay, pain/complication, quality of life
Prevention	risk factors/health condition	preventive measure (e.g., lifestyle change)	another preventive measure, or N/A	mortality rate, disease incidence
Diagnosis	disease/condition	diagnostic test/procedure	"reference" or "gold" standard test for disease/condition	test utility (sensitivity, specificity, odds ratio)
Prognosis (Forecast)	duration/severity of main prognostic factor or clinical condition	time or "watchful waiting"	usually N/A	survival rate, mortality rate, rate of disease progression
Etiology (Causation)	risk factor, health disorder, or health condition	strength/dose of risk factor and duration of exposure	usually N/A	survival rate, mortality rate, rate of disease progression

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Process Overview

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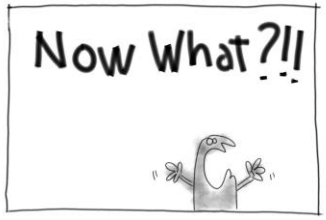
Next Step – Review of the Literature



- The language of your question drives the search terms for the literature
- Goal – to find out what is currently known about your question

Image Source: likeawhisper.wordpress.com/2010/09/25/now-what/

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Literature Search Drives the Type of Project

- If the question has not been answered, or inadequately, or not in your population
  - ≫Research! To fill the knowledge gap.
- If you find good evidence to answer your question
  - ≫Implement the EBP and measure the outcomes
- If you are perhaps partially, or inconsistently implementing current EBP
  - ≫QI process to increase consistent and reliable implementation, measuring change over time

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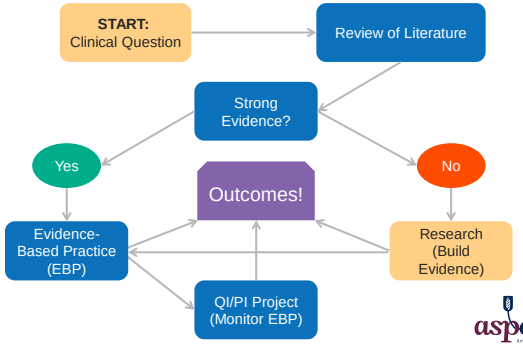
Process Overview



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Research

- "Studious inquiry or examination especially: investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws" (https://www.merriam-webster.com/dictionary/research)
- More simply, a formal process to fill a knowledge gap, and answer a question for which there is no (or inadequate) evidence

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Research Process

- Identify a research problem (ask that question)
- Review the literature (critical appraisal)
- Determine research question (refined by the review of literature)
- Develop research methods (appropriate to answer the question)
- Collect and analyze data
- Document the work
- Communicate your findings! (pubs and presentations)

Source: researchwriting.unl.edu/overview-research-process

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You Have Now Added to the Body of Evidence in Your Topic Area!

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Ok, but what about EBP and QI? How is that different?

Image Source: fhclabs.org/deep-trip-series/the-versus-series/research-based-writing-vs-experience-based-writing/attachment/descriptive-research/

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Process Overview

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What Is Evidence Based Practice?

EBP is "the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research." (Sackett D, 1996)

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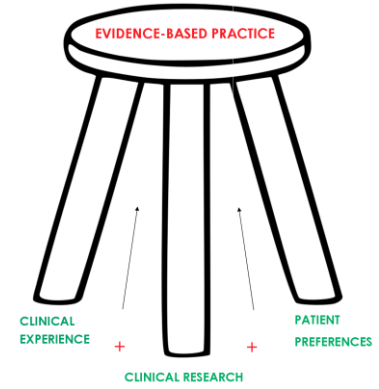

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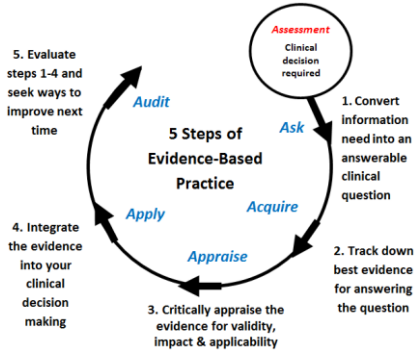

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Ask

Question Type	Best Study Design
Therapy (Treatment)	Randomized Controlled Trial
Prevention	RCT or Prospective Study
Diagnosis	RCT or Cohort Study
Prognosis (Forecast)	Cohort Study and/or Case-Control Study
Etiology (Causation)	Cohort Study
Meaning	Qualitative Study

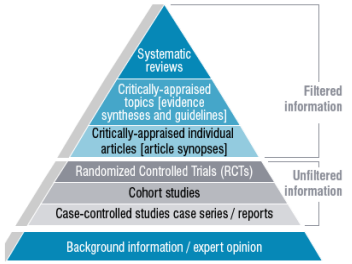

Image Source: rtso.ca/research-tips-101-the-hierarchy-of-evidence/

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Acquire

- **Systematic Reviews/Meta Analyses**
  - ≫ *Cochrane Library*
  - ≫ *PubMed Clinical Queries*
- **Popular Databases**
  - ≫ *PubMed*
  - ≫ *Medline*
  - ≫ *CINAHL (EBSCO)*
  - ≫ *PsycINFO (EBSCOhost)*
  - ≫ *Scopus*
  - ≫ *Web of Science*
- **Nutrition Sources**
  - ≫ *Clinical Practice Guidelines*
  - ≫ *Nutrition Care Manual*
    - Adults, pediatrics, sports

PICO	Clinical Question	Search Terms / Strategy
Patient, Population (or Problem)	Knee osteoarthritis	knee, osteoarthritis
Intervention	hydrotherapy	hydrotherapy, water therapy, whirlpool baths, aquatherapy
Comparison or Control (optional)	traditional physiotherapy	phsyiotherapy, physical therapy
Outcome	relief of pain	pain
Type of Question	Therapy	Clinical Query – Therapy/narrow or Limit to randomized controlled trial as document type
Type of Study	RCT	Clinical Query – Therapy/narrow or Limit to randomized controlled trial as document type

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Appraise

- Why was the study done?
- What type of study was done?
- What are the study characteristics?
- What was done to address bias?
- What are the results, and are they valid?
- What conclusions can you make?

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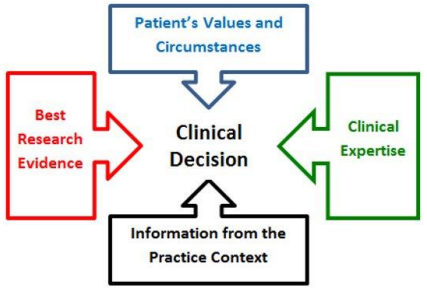
Apply



Step 4 – Apply - synthesise the best scientific knowledge with your clinical expertise and the patient's unique values and circumstances to reach a clinical decision.

Image Source: canberra.libguides.com/evidence

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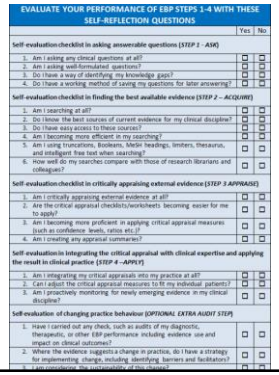
Audit


EVALUATE YOUR PERFORMANCE OF EBP STEPS 1-4 WITH THESE SELF-REFLECTION QUESTIONS

	Yes	No
Self-evaluation checklist in asking answerable questions (STEP 1 - ASK)		
1. Am I asking any clinical questions at all?	☐	☐
2. Am I asking well-formulated questions?	☐	☐
3. Do I have a way of identifying my knowledge gaps?	☐	☐
4. Do I have a working method of saving my questions for later answering?	☐	☐
Self-evaluation checklist in finding the best available evidence (STEP 2 – ACQUIRE)		
1. Am I searching at all?	☐	☐
2. Do I know the best sources of current evidence for my clinical discipline?	☐	☐
3. Do I have easy access to these sources?	☐	☐
4. Am I becoming more efficient in my searching?	☐	☐
5. Am I using truncations, Booleans, MeSH headings, limiters, thesaurus, and intelligent free text when searching?	☐	☐
6. How well do my searches compare with those of research librarians and colleagues?	☐	☐
Self-evaluation checklist in critically appraising external evidence (STEP 3 APPRAISE)		
1. Am I critically appraising external evidence at all?	☐	☐
2. Are the critical appraisal checklists/worksheets becoming easier for me to apply?	☐	☐
3. Am I becoming more proficient in applying critical appraisal measures (such as confidence levels, ratios etc.)?	☐	☐
4. Am I creating any appraisal summaries?	☐	☐
Self-evaluation in integrating the critical appraisal with clinical expertise and applying the result in clinical practice (STEP 4 –APPLY)		
1. Am I integrating my critical appraisals into my practice at all?	☐	☐
2. Can I adjust the critical appraisal measures to fit my individual patients?	☐	☐
3. Am I proactively monitoring for newly emerging evidence in my clinical discipline?	☐	☐
Self-evaluation of changing practice behaviour (OPTIONAL EXTRA AUDIT STEP)		
1. Have I carried out any check, such as audits of my diagnostic, therapeutic, or other EBP performance including evidence use and impact on clinical outcomes?	☐	☐
2. Where the evidence suggests a change in practice, do I have a strategy for implementing change, including identifying barriers and facilitators?	☐	☐
3. I am considering the sustainability of this change?	☐	☐

- Well-formulated, answerable questions
- Efficiency in search for best evidence
- Critical appraisal of evidence for validity and usefulness
- Integration of critical appraisal into practice
- Translational of findings to improvement in practice

Image Source: canberra.libguides.com/c.php?g=599346&p=4148681

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EBP Examples?

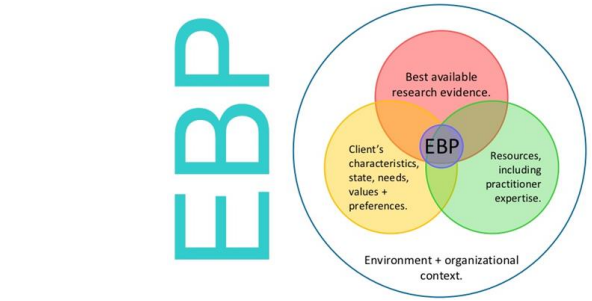

Image Source: simmons.libguides.com/ebsw

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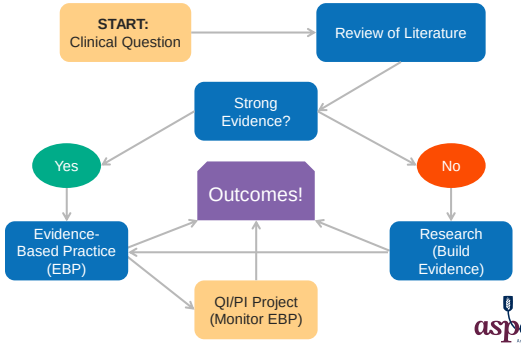
Process Overview



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What is Quality Improvement?

Quality Improvement is a formal approach to the analysis of performance and systematic efforts to improve it. There are numerous models used. Some commonly discussed include:

- DMAIC: Define, Measure, Analyze, Improve, Control
- PDSA: Plan, Do, Study, Act
- CQI: Continuous Quality Improvement

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How You Can Contribute — QI/PI

- Question – are we doing what we are supposed to be (EBP) correctly and consistently?
- Measure monitor current practices and outcomes compared to guidelines and EBP

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QI Examples?

Image Source: iactglobal.in/blog/how-six-sigma-training-can-enhance-your-managerial-skills/

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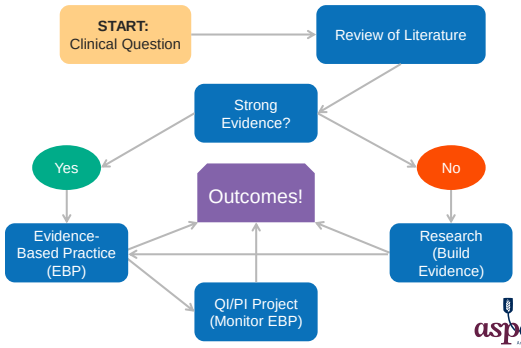
Process Overview



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Mick, J. Addition of a decision point in evidence-based practice process steps to distinguish EBP, research and quality improvement methodologies. *Worldviews on Evidence-Based Nursing 12*(3); 179-181.

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Points to Ponder #1

Which of the following project types strives to answer a question that lacks evidence?

1. Research Correct Answer
2. Evidence Based Practice (EBP)
3. Quality Improvement (QI)

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Answer #1

Which of the following project types strives to answer a question that lacks evidence?

1. Research Correct Answer
2. Evidence Based Practice (EBP)
3. Quality Improvement (QI)

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Points to Ponder #2

After formulating an initial question, all projects NEXT require:

1. Development of data collection methods
2. Search and appraisal of literature
3. IRB approval
4. Development of an abstract

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Answer #2

After formulating an initial question, all projects NEXT require:

1. Development of data collection methods
2. Search and appraisal of literature
3. IRB approval
4. Development of an abstract

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Points to Ponder #3

Evidence-based practice (EBP) includes all of the following components EXCEPT?

1. Patient values and preferences
2. Best current research and evidence
3. Strict adherence to rigid methods
4. Clinician expertise and experience

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Answer #3

Evidence-based practice (EBP) includes all of the following components EXCEPT?

1. Patient values and preferences
2. Best current research and evidence
3. Strict adherence to rigid methods
4. Clinician expertise and experience

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Points to Ponder #4

An approach to the analysis of performance and systematic efforts to improve it describes:

1. Evidence-based practice
2. Quality improvement
3. Research
4. Qualitative research

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Answer #4

An approach to the analysis of performance and systematic efforts to improve it describes:

1. Evidence-based practice
2. Quality improvement
3. Research
4. Qualitative research

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