



Differentiating Between EBP/QI/Research: Introduction to Evidence Based Practice

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13th Annual Nursing Research Conference
November, 2018

Objectives

- **Identify the origins of EBP and describe how it is used today in nursing practice and education.**
- **Compare methods of conducting research versus participating in EBP or QI projects.**
- **Use case studies to illustrate the difference between research, QI and CI.**

Practice Issues

- *Old habits never die
- Misconceptions
- Unattractive alternatives
- Misuse: over or under
- Ineffective practice, policies, protocols
- Infusion of new Technology
- Documenting worth as providers
- *Slow infusion and difficult to change practice



Common Concepts, Free Photo

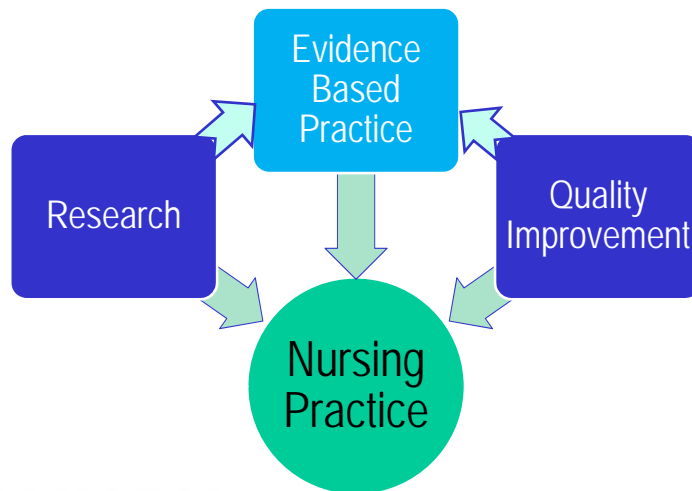
Outcomes

- Translation of Research or Evidence into practice
- Quality
- Value
- Effectiveness
- Efficiency
- Safety
- Stakeholders
- Outcome Measurement: Benchmarking, Quality Indicators



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Three Processes:



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Evidence Based Practice: Definition

- Integrating individual expertise with the best available clinical evidence from systematic research.
- Systematically finding, appraising and utilizing research as the basis for clinical practice.

(Sackett, DL (1997))

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Evidence Based Practice

History:

- 1800' s: Florence Nightingale: better outcomes by sanitary conditions.
- 1970' s: **Medicine**: current best evidence to make patient care decisions.
- 1990' s: **Nursing**: Problem solving approach, clinical decision, evidence, clinical expertise, assessment, patient preferences
- IOM 2000: Deficits exist in health care causing harm
- IOM 2001: Crossing the Quality Chasm, healthcare transformation
- IOM 2011: "nurses lead and diffuse collaborative improvement efforts"
- **Current Practice**: Integrate research, levels of evidence, QI

(Mackey and Bassendowski. 2017)

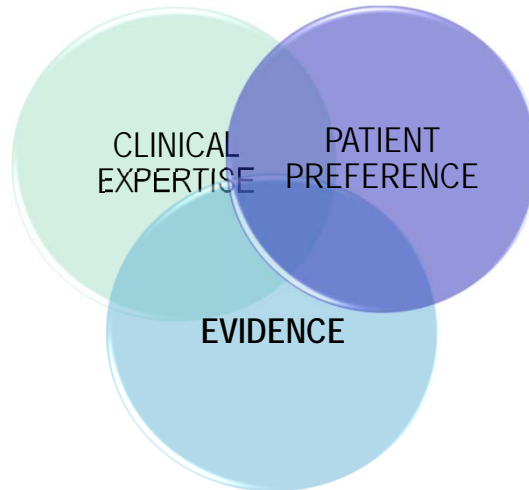


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Evidence Based Practice History

- **David Sackett**: American-Canadian MD who used evidence in medical school by viewing and determining individual patient needs. Considered the father of EBP.
- **David Sackett (1996)**: "conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. Integrating individual clinical expertise, patient values and the best research evidence into the decision making process for patient care."

EVIDENCE BASED PRACTICE



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Evidence Based Practice: 7 Steps

1. Cultivate a spirit of Inquiry
2. Ask Clinical Questions (PICOT)
3. Search for the Best Evidence
4. Critically appraise the evidence
5. Integrate evidence with clinical expertise and patient preference
6. Evaluate the outcomes of practice decision or change
7. Disseminate EBP results

(Melnyk-Mazurek, Fineout-Overholt, Stillwell and Williamson, 2010)

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RESEARCH

DEFINITION:

Scientific method or study in which a hypothesis is determined and tested empirically.



Benefits of Research

- Experimentation; especially over time
- Discovery of new knowledge to base practice.
- Evaluates differences in outcomes based on variables.
- Rigorous analysis of intervention or improvement
- Uses techniques like randomization, blinding, large sample sizes, control for confounding variables to better decide the true effect.
- Answers a question with significant statistical evidence.

(Neidner, 2016)

Steps in Research Process

- Identify a Problem or Ask a Question.
- Review of literature
- Determine methods, design, procedures
 - Quantitative
 - Qualitative: real life
- Theoretical framework
- Human subjects protection; Consent/Assent
- Validity threats, confounding variables, etc.
- Data collection and statistical analysis
- Interpretation and Dissemination; Generalizable

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Research: Types of Studies

- Experimental; Quasi-experimental
- Observational
- Correlational
- Clinical Trials: RCT
- Meta-analysis
- Systematic Review
- Longitudinal
- Retrospective; Prospective



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QUALITY IMPROVEMENT

Definitions:

- “Systematic and continuous actions that lead to measurable improvement in health care services and the health status of targeted patient groups” (HRSA, 2011)
- “Direct correlation between the level of improved health services and the desired health outcomes of individuals and populations” (IOM, 1996)

Principles of QI

- Systems and Processes
- Focus on Patients
- Focus on Teams
- Data Driven
- Intervention
- Evaluation
- Changes in Practice



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QI Process

1. Plan: PICO or Research question formed

Evidence is collected: Staff survey, Review of the literature

Calls to local hospitals, personal expertise

2. Do: Collect and analyze data

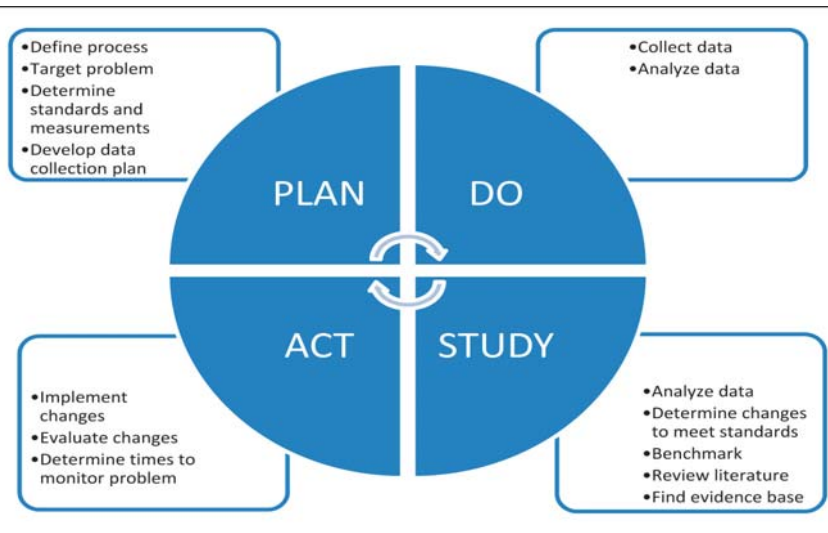
3. Study: Review literature, data, and other evidence

Plan change.

4. Act: Implement changes, Identify when and how to monitor, Evaluate changes



QI Process: PDSA



My Example!! Vital Signs????



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Vital Signs!!

WHY do BSN-prepared nurses need Orders to take vital signs??

If the patient is crashing???

We worry about sleep in hospitalized patients, but wake them to take VS??

Nurses are prepared to Assess patients!

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Example: Nurses and Vital Signs

- **Research Question:** Does nurse-determined vital sign frequency affect the identification of patient deterioration and length of stay in hospitalized, monitored pediatric patients.
- **PICO Question:** In hospitalized, monitored pediatric patients does the use of nurse-determined, vital sign frequency affect the incidence of rapid response calls and length of stay as compared to those children who have vital signs taken per provider orders or unit protocol?

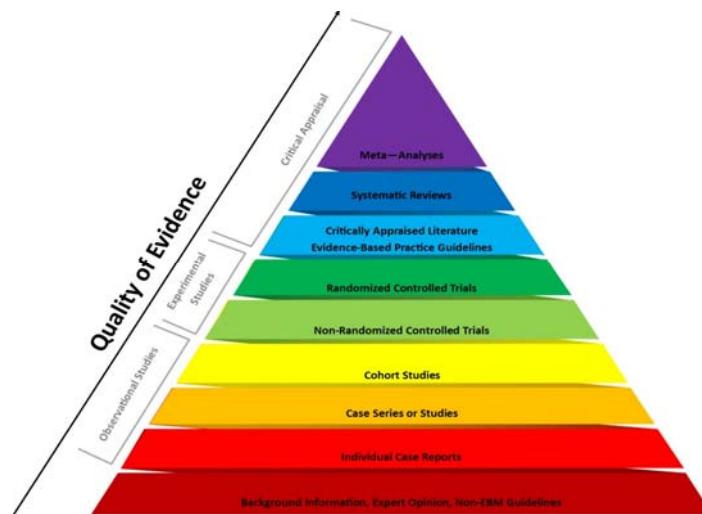
Next Step: Review the Evidence

1. Literature:
 - Appropriate Data Base: Pubmed, CINAHL, Clinical Key, OVID
 - Key Words: vital signs, pediatric inpatient, monitor children
 - MESH Terms
2. Practice Guidelines
 - National Organizations: SPN, ANA, DNA, NAPNAP, AACN, etc
 - Government regulations
3. Policy
4. Expert Opinion

Critical Appraisal of Literature

- Is the study question relevant?
- Does the study add anything new?
- What type of research question is being asked?
- Is the study design appropriate?
- Bias or confounding variables addressed?
- Performed according to the original protocol?
- Statistical test selected and conducted appropriately? Power?
- Do the data justify the conclusions?
- Was there any conflict of interest?

Evidence Pyramid



Evidence Rating Guidelines

- Initially developed in Canada in 1979
- Sackett levels: (1989)

I	Large RCT's with clear cut results
II	Small RCT's with unclear results
III	Cohort and Case Controlled studies
IV	Historical cohort or case controlled studies
V	Case Series, studies with no control

What I Found!

- Purpose of VS
 - ???
 - Identify early signs of deterioration
 - Electronic monitoring increased RRT, earlier identification of deterioration, alarm fatigue (Bellomo, et al., 2012), (Klipps, et al, 2017)
 - Infrequent VS associated with increased death, adverse events (Derby, Hartung, et al, 2017), (Lee, Kim, 2018)
 - Something that we have done forever!
- Accuracy of VS assessment and interpretation
 - Who takes them?
 - Nurses' awareness with EWS/PEWS frequency (Lee, Kim, et al, 2018)
- Frequency of VS
 - No evidence to support frequency!
 - Relationship between yrs experience and likelihood to skip. (Hope, et al, 2017)
 - Minimum frequency by experts, q 12 hrs (Derby, Hartung, 2017)
- VS as interruption in patient care or sleep

What I Found!

Systematic Review of Vital Signs: 126 studies

- purpose
- measurements that indicate patient VS
- limitations of VS measurements
- optimal frequency
- **Results:**
 - poor adherence to recommended practices
 - Many factors can alter VS results
 - Temperature monitoring largest research body
 - Not enough evidence to document frequency, accuracy or implications

(Lockwood, Conroy-Hiller, 2004)

WHAT NOW???

- Conduct More Research
- Form a Team to address problem
- Determine VS evaluation process on one unit as QI.
- Involve stakeholders and experts to identify next steps.
- **EVALUATE!!**



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Putting the Puzzle together: QI, Research, EBP

- Identify a problem
- Document the problem
- Compile Evidence
- Rate and critique the Evidence
- Utilize the highest levels to determine best approach.
- Involve stakeholders***
- Create a change
- Monitor/Evaluate again



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Which Method would you choose?

- Research

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"We've run out of things to name our drugs.
It's time to invent some new alphabet letters."

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Quality Improvement Project??

Nurstoons

by Carl Elbing



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Quality and Research Methods

Quality Improvement:

- Scientific measures
- Measures and Mechanisms change over time with on-going results.
- System processes may be changed or analyzed.
- Oriented toward systems or process improvements and measures performance outcomes.
- Testing: Parametric and nonparametric, root-cause analysis, cross walk, graphing

Research Components

- Scientific measures
- Protocol-driven intervention with strict controls and management of variables
- Specific quantitative and qualitative measurements
- Interventions with individuals, measures outcomes relative to study.
- Testing: statistical testing with significance determination

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EBP versus Research???

EBP:

Systematic, data guided projects to improve outcomes, better performance and professional development.

Systematic and continuous actions that lead to measurable improvements in healthcare.

Formal approach to the analysis of improvement and systematic efforts to improve it.

Takes much less time for translation than Research!

Involves teams, does not require high level expertise!

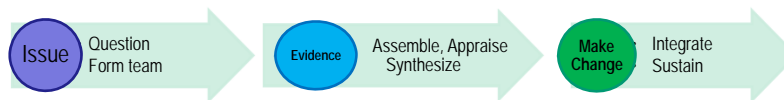
Evidence

■ Continuous Learning

- Increased complexity of Care
- 2,100 Scientific Reports, 75 clinical trials and 11 Systematic Reviews published daily
 - Read 17 articles 365 days a year
- Following primary care guidelines would require 21.7 hours per day
- Shortcuts can lead to patient errors

EBP and Theoretical Models

- Assist in conducting EBP, reviewing and assessing literature:
 - Iowa Model of EBP
 - Stetler Model
 - ACE Star Model
 - Johns Hopkins EBP Model
 - Developed by nurse scientists
 - Utilized to implement and better understand EBP processes



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EBP and Nursing Education

- 2003: Core Competencies for Nursing Practice
- 2004: Core Competencies for Nurse Practitioners
 - Patient Centered Care
 - Interprofessional Teams
 - Employ EBP
 - Apply Quality Improvement
 - Utilize Informatics
- 2013 QSEN Competencies
 - Quality and Safety Education in Nursing Institute

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ONE MORE TERM!!



CONTINUOUS QUALITY
IMPROVEMENT

REALLY???

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CONTINUOUS Quality Improvement or CQI

- **SYSTEMATIC PROCESS**
 - Identify, Describe, Analyze
 - Test, Implement, Evaluate, Revise
- **PERFORMANCE MANAGEMENT**
 - Monitor programs, Assure goals
- **PROCESS EVALUATION**
- **CQI TEAM**
 - Stakeholders
- **CQI CHAMPION:** Leader
- **LEAN MODEL / LOGIC MODEL**

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Principles of Continuous Quality Improvement

- **Leadership:**
 - System strategy, usually led by upper management
- **Culture - values and beliefs of the organization**
 - Customer satisfaction
 - Employee engagement
 - Trust and respect
 - Teamwork
 - Quality
- **Process – set of action steps**

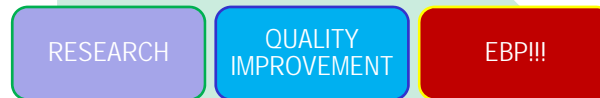
*Toyota Production System, Institute of Healthcare Improvement

Quality: Structure, Process, Outcome, Patient Experience

- Quality Measures or Indicators
- Benchmarking against set expectations or national sources
- Positive patient experiences
- Financial Quality and Value
- Health Plan, Provider, Health Care Professional
- Continuous Quality Improvement

CHANGE CHALLENGE!!

- WHAT DO YOU WANT TO CHANGE?
- HOW IMPORTANT IS IT?
- WHO ARE YOUR COACHES? WHO IS YOUR TEAM?
- WHAT IS YOUR INTENDED OUTCOME?
- BE COURAGEOUS!
- THINK OUTSIDE THE BOX! CAN WE CHANGE ORDERS FOR VS???



QUESTIONS???



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