Evidence-Based Practice Project
Development: From Idea to Implementation

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Conflict of Interest Disclosure

• Conflicts of Interest for ALL listed contributors.
  • Tamara Wilkins, DNP, APN, FNP-BC,
    -No conflict of interest
  • Patricia Bruckenthal, PhD, APRN-BC, ANP, FAAN
    -Picera advisory board

What is EBP Practice?

• A strategic method that explores the best available evidence to answer a specific clinical question
• Utilizing information-seeking skills on a routine basis

(Melnyk & Fineout-Overholt, 2015)
Benefits

- Improves patient outcomes
- Individual empowerment
- Group cohesiveness
- Job satisfaction
- Decreased turnover

(Melnyk, Fineout-Overholt, Giggleman, & Cruz, 2010; Melnyk, Fineout-Overholt, Stillwell, Williamson 2009)

Components of EBP

(External evidence) ∩ (Clinical expertise) ∩ (Patient preferences and values)

(Melnyk & Fineout-Overholt, 2015)

Steps to the EBP Process

1. Spirit of inquiry
2. Clinical question
3. Search and collect evidence
4. Critically appraise the evidence
5. Integration of best evidence
6. Evaluate outcomes
7. Disseminate the outcomes

(Melnyk, Fineout-Overholt, Giggleman, & Cruz, 2010; Melnyk, Fineout-Overholt, Stillwell, Williamson 2009)
Clinical question

- Derived from a clinical practice interest or problem
- Significance to patient and nursing

PICO/PICOT Format

- P = patient population(s)
- I = intervention or issue of interest
- C = comparison intervention or issue of interest
- O = outcome
- T = time

(Melnyk & Fineout-Overholt, 2015; Stillwell, Fineout-Overholt, Melnyk, & Williamson, 2010)
Examples

- Among patients receiving pain medication (P), how does using the Pasero Opioid-Induced Sedation Scale (I) compared to other sedation scales (C) affect identification of opioid induced-sedation (O)?
- In adult patients undergoing surgery (P), how does guided imagery (I) compare with music therapy (C) affect analgesia use (O) within the first 24 hours post-op (T)?

Clinical Question Situations

- Intervention
- Prognosis/Prediction
- Diagnosis/Diagnostic test
- Etiology
- Meaning

(Melnyk & Fineout-Overholt, 2015; Stillwell, Melnyk, & Williamson 2010)

Type of Research by PICO/PICOT Situation

**Intervention/Diagnosis/Diagnostic test**
1. Systematic review/meta-analysis of RCTs
2. RCTs
3. Non-RCTs
4. Cohort study or case-control studies
5. Meta-synthesis of qualitative or descriptive studies
6. Qualitative or descriptive single studies
7. Expert opinion

(Melnyk & Fineout-Overholt, 2015)
Type of Research by PICO/PICOT Situation

<table>
<thead>
<tr>
<th>Prognosis/Prediction/</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etiology</td>
<td></td>
</tr>
<tr>
<td>1. Synthesis of cohort study or case-control studies</td>
<td>1. Meta-synthesis of qualitative studies</td>
</tr>
<tr>
<td>2. Single Cohort study or case-control studies</td>
<td>2. Single qualitative studies</td>
</tr>
<tr>
<td>3. Meta-synthesis of qualitative or descriptive studies</td>
<td>3. Synthesis of descriptive studies</td>
</tr>
<tr>
<td>4. Single qualitative or descriptive studies</td>
<td>4. Single descriptive studies</td>
</tr>
<tr>
<td>5. Expert opinion</td>
<td>5. Expert opinion</td>
</tr>
</tbody>
</table>

(Melnyk & Fineout-Overholt, 2015)

Clinical Question

Formulation
(group discussion)

Sources

Of Evidence
Systematic Reviews, Meta-analysis, and Clinical Practice Guidelines (CPGs)

- Cochrane Database
- Journals
- National Guideline Clearinghouse (NGC)  
  http://www.guideline.gov
- Joanna Briggs Institute  
  http://joannabriggs.org
- National Institute for health and Care Excellence (NICE)  
  https://www.nice.org.uk/

Systematic Reviews, Meta-analysis and Clinical Practice Guidelines

- Registered Nurses Association of Ontario (RNAO)  
  https://www.rnao.org/
- Scottish Intercollegiate Guideline Network
- Essential Evidence Plus
- UpToDate

Databases

- American College of Physicians (ACP)
- CINAHL Plus
- EMBASE
- Evidence-Based Nursing (EBN)
- Medline
- Ovid
- PsycINFO
- PubMed
Search Methodology for the Best Evidence

- Keyword
- Title
- Subject heading
- Search limits

Time Saving Tips

- Remember the terms used and limiting factors your search
- Save searches
- Studies found
- Studies reviewed

Levels of evidence (Rating)

- **Level I**: A systematic review or meta-analysis of relevant RCTs
- **Level II**: Well-designed RCTs
- **Level III**: Well-designed controlled trials without randomization
- **Level IV**: Well-designed case-control and cohort studies

(Melnyk & Fineout-Overholt, 2015)
Levels of evidence (Rating)

- **Level V**: Evidence from systematic reviews of descriptive and qualitative studies
- **Level VI**: Evidence from single descriptive or qualitative studies
- **Level VII**: Evidence from the opinion of authorities and/or reports of expert committees

(Melnyk & Fineout-Overholt, 2015)

Hierarchy of Evidence for Intervention Questions

- Systematic Reviews
- RCTs
- Controlled Cohort
- Uncontrolled Cohort
- Case studies and series
- Qualitative & descriptive studies
- Evidence-Based Practice implementation & QI projects
- Expert Opinion

(Melnyk & Fineout-Overholt, 2015)

Review of Articles

- Review abstracts
- Research design
- Answers clinical question
  - Yes
  - Not sure
  - No
Critical Appraisal

- Rapid Critical Appraisal Checklists
- Evaluation Tool
- Synthesis Tool

Basic questions about the study?

- Source and Study purpose
- Sample size
- Variables
- Theoretical framework
- Design
- Instruments
- Method of Data collection and analysis
- Findings
- Comments

Critical Appraisal Quantitative Studies

Reliability of Results
- Magnitude of Effect
- Strength of Association
- Clinical significance
- Precision

(Brown, 2014; Melnyk & Fineout-Overholt, 2015)
Critical Appraisal Quantitative Studies

Applicability
• Fit of Evidence
• Safety and expected benefit
• Feasibility

(Brown, 2014; Melnyk & Fineout-Overholt, 2015)

Critical Appraisal of Quantitative Studies

Validity of Results
• Bias
• Confounding variables
• Credibility

(Brown, 2014; Melnyk & Fineout-Overholt, 2015)

Evaluation Tools

<table>
<thead>
<tr>
<th>Source (Author and date)</th>
<th>Theoretical framework</th>
<th>Design/Method</th>
<th>Sample/setting</th>
<th>Variables measured</th>
<th>Outcomes measured</th>
<th>Findings</th>
<th>Level of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisak, Belkin, Lehe, &amp; Bansal (2011)</td>
<td>none</td>
<td>Descriptive</td>
<td>Convenie sample of 78 pediatric patients</td>
<td>SCD severity</td>
<td>Treatment adherence</td>
<td>Pain and disease type are significant predictors of Peds QOL scores.</td>
<td>Level V</td>
</tr>
</tbody>
</table>
Synthesis of the Evidence (Integration)

<table>
<thead>
<tr>
<th>Source (author and date)</th>
<th>Sample size</th>
<th>Study design</th>
<th>Intervention</th>
<th>Major findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith, 2010</td>
<td>54 patients with chronic pain</td>
<td>Cohort</td>
<td>Mindful meditation</td>
<td>Pain ↓</td>
</tr>
<tr>
<td>Lewis, 2011</td>
<td>30 patients with pain</td>
<td>Descriptive survey</td>
<td>Music</td>
<td>Pain ↓</td>
</tr>
<tr>
<td>Nabors, 2009</td>
<td>all studies of meta-analysis</td>
<td>Systematic Review</td>
<td>Music, environment, temperature, relaxation</td>
<td>Pain ↓</td>
</tr>
<tr>
<td>Connor, 2014</td>
<td>40 chronic pain</td>
<td>Descriptive Survey</td>
<td>Massage</td>
<td>Pain ↓</td>
</tr>
</tbody>
</table>

(Melnyk & Fineout-Overholt, 2015)

Qualitative Research Studies

- Ethnography
- Grounded Theory
- Phenomenology

(Brown, 2014; Melnyk & Fineout-Overholt, 2015)

Qualitative Techniques

- Observation and Fieldnotes
- Interviews and Focus Groups
- Narrative and Content Analysis

(Brown, 2014; Melnyk & Fineout-Overholt, 2015)
Sampling

- Purposeful/purposive
- Theoretical
- Nominated or snowball
- Volunteer/convenience

(Brown, 2014; Melnyk & Fineout-Overholt, 2015)

Trustworthiness Criteria

- Credibility
- Transferability
- Dependability
- Confirmability

(Brown, 2014; Melnyk & Fineout-Overholt, 2015)

Critical Appraisal of Qualitative

Common categories
- Trustworthy and credible
- Results
- Applicability

(Brown, 2014; Melnyk & Fineout-Overholt, 2015)
Clinical Expertise

• Clinical
• Technical
• Organizational
• Experience

(Patton, 2014; Melnyk & Fineout-Overholt, 2015)

Patient Preferences and Values

• Patient centeredness
• Values
• Preferences

EBP project: what have we learned—where are we going

1. Respond to an identified need for a new or revised protocol or practice change (PICO/PICOT)
2. Form a project work group
3. Search for relevant research evidence (ROL)
4. Extract information from relevant research reports (TOE)
5. Eliminate poor quality evidence (appraisal)
6. Use recommendations/findings to design a clinical protocol
7. Plan and implement the protocol
8. Evaluate the impact of the protocol
9. Revisit and revise the protocol or its implementation as necessary
10. Disseminate findings
Assess and Eliminate Barriers: Promote Engagement

<table>
<thead>
<tr>
<th>Objective</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engage staff and stakeholders in assessing and eliminating barriers.</td>
<td>- Engage stakeholders to identify educational content and strategies to train about process change. - Seek information about stakeholders' views on the effectiveness of the practice change. - Involve influential staff and leaders in conducting discussions.</td>
</tr>
<tr>
<td>Prioritize clinical issues</td>
<td>- Identify critical issues of interest and importance to stakeholders. - Choose issues with valid evidence.</td>
</tr>
<tr>
<td>Evaluate the infrastructure</td>
<td>- Identify individuals and communities who have demonstrated leadership. - Gain administrative support for time and personnel for projects.</td>
</tr>
<tr>
<td>Develop experts in the evidence-based process</td>
<td>- Form academic partnerships. - Provide focused classes/discussions on finding and evaluating evidence. - Mentor staff in critical appraisal of evidence and formulating practice recommendations.</td>
</tr>
</tbody>
</table>

Moving from Evidence to Practice Change

**Phase 1**
- Identify clinical problem
- Identify outcome targets
- Identify data sources
- Build data base for project
- Measure Baseline

**Phase 2**
- Review and critically appraise evidence
- Synthesize findings and analyze gap between evidence and current practice
- Identity stakeholders in process change

**Phase 3**
- Educate clinicians and other stakeholders about new practice
- Share successful new practice and serve as a resource
- Measure reliability of methods and refinements as needed

**Phase 4**
- Choose data collection cycle
- Statistically analyze effect of new practice on clinical problem
- Disseminate findings to stakeholders and others
- Identify opportunities for additional improvement

Formulate a plan

<table>
<thead>
<tr>
<th>Objective</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish formal implementation teams</td>
<td>- Integrate experts in change theory at the systems level, such as DNP's. - Include expert staff members to ensure clinical feasibility and adoption into practice. - Create discomfort with the status quo.</td>
</tr>
<tr>
<td>Establish evidence</td>
<td>- Inform and educate individuals on current knowledge deficits, skill deficits, and skepticism. - Provide opportunities for knowledge exchange.</td>
</tr>
<tr>
<td>Improve clinical back</td>
<td>- Anticipate tools and processes staff will need to transform practice. - Revise patient care documentation. - Ensure easy access to clinical resources.</td>
</tr>
<tr>
<td>Mind the end</td>
<td>- Establish goals with consideration of all stakeholders. - Integrate and remediate into workflow processes of the end of the plan.</td>
</tr>
<tr>
<td>Practice energy sources</td>
<td>- Engage support personnel. - Anticipate deficits and take patience and persistence.</td>
</tr>
<tr>
<td>Move enough time</td>
<td>- Develop incremental project steps. - Establish a timeline.</td>
</tr>
<tr>
<td>Celebrate success</td>
<td>- Acknowledge staff contribution. - Ensure recognition by supervisors and administration.</td>
</tr>
</tbody>
</table>
Develop a timeline

<table>
<thead>
<tr>
<th>Project Component</th>
<th>Time Frame (Begin 10-1-2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify practice gap, modulate current practice, analyze current data</td>
<td>2-3 weeks</td>
</tr>
<tr>
<td>Negotiate staff and stakeholders evaluation milestones</td>
<td>1 week</td>
</tr>
<tr>
<td>Develop and refine PICO question</td>
<td>2-4 weeks</td>
</tr>
<tr>
<td>Develop search strategy and conduct search</td>
<td>4-6 weeks</td>
</tr>
<tr>
<td>Critically appraise, evaluate, and synthesize evidence</td>
<td>4-8 weeks</td>
</tr>
<tr>
<td>Formulate practice recommendations</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Celebrate success of progress to date</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Gain stakeholder support, assess and eliminate barriers</td>
<td>2-4 weeks</td>
</tr>
<tr>
<td>Develop clinical tools</td>
<td>Variable</td>
</tr>
<tr>
<td>Conduct rapid cycle pilot, revise as needed, share results with staff</td>
<td>Variable</td>
</tr>
<tr>
<td>Implement practice change</td>
<td>1 week</td>
</tr>
<tr>
<td>Measure clinical outcomes</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Analyze measurement data</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Celebrate success</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

Determining Evaluation Outcomes: EBP evaluation indicators

<table>
<thead>
<tr>
<th>Evaluation Indicator</th>
<th>Measurement Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome measures</td>
<td>Outcome measures: Quality medical outcomes such as health status, death, disability, iatrogenic effects of treatments, health behaviors, economic impact of therapy</td>
</tr>
<tr>
<td>Quality care</td>
<td>Managing common symptoms such as pain, fatigue, nausea and vomiting, sleep disturbance, depression, emotional distress, reconsideration of cultural beliefs, caring attitude</td>
</tr>
<tr>
<td>Patient-centered</td>
<td>Include effective communication, open-ended interactions, open discussion of illness, disease, options of care, sensitivity to pain and emotional distress, consideration of cultural beliefs, caring attitude</td>
</tr>
<tr>
<td>Efficiency of processes</td>
<td>Appropriate timing of interventions, effective discharge planning and care transitions</td>
</tr>
<tr>
<td>Environmental changes</td>
<td>Evaluation of policy and procedure adherence, unit resource availability, access to supplies and materials for best practice</td>
</tr>
<tr>
<td>Professional expertise</td>
<td>Knowledge and expertise of clinical staff</td>
</tr>
</tbody>
</table>

Outcome measurement for outcome management

- Sources of evidence
  - Electronic health records (patient level information)
  - Quality improvement (incident report, error, trends, patient satisfaction)
  - Finance (codes for patient diagnosis, patient volume, medications used, test performed)
  - Pre-existing instruments
  - Non-pre-existing sources (develop your own data collection tool)

<table>
<thead>
<tr>
<th>Operational</th>
<th>Quality</th>
<th>Satisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survival</td>
<td>Morbidity</td>
<td>Function score</td>
</tr>
<tr>
<td>Length of stay</td>
<td>Infection rate</td>
<td>Health status score</td>
</tr>
<tr>
<td>Average LOS</td>
<td>Compliance with EB care</td>
<td>Patient satisfaction score</td>
</tr>
<tr>
<td>Time in ED</td>
<td>Mean post-op pain</td>
<td>Staff satisfaction score</td>
</tr>
<tr>
<td>Time in ED</td>
<td>Mean post-op pain</td>
<td>Professional satisfaction score</td>
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<tr>
<td>Time in ED</td>
<td>Mean post-op pain</td>
<td>Patient satisfaction score</td>
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</table>
Strategies for Sharing EBP project

• Display data on unit using score cards or dashboards
• Report at relevant committees
• Panelist presentation
• Grand rounds
• Disseminate at meetings (local, national, international)
  — Poster or podium
• Journal clubs
• Publication
• Health policy (policy briefs)
• Media

Spirit of Inquiry

• Current Practice
• Situation

EBP Project Example

Among patients receiving pain medication (P), how does using the Pasero Opioid-Induced Sedation Scale (I) compare to other sedation scales (C) affect nursing confidence in identification of opioid induced-sedation (O)?
Search Strategy

- Databases: CINAHL PLUS, Medline, PubMed, Joanna Briggs Institute
- Keywords: Sedation scales, opioid, nursing, Pasero Opioid-Induced sedation scales, RASS, Ramsay
- Limits: English, research articles

Yielded 6 articles
1 EBP systematic review
3 research articles
EBP practice project

Critical Appraisal and Synthesis

- Evaluation table
- Synthesis

Planning

- Key Stakeholders
- Adopt POSS
- To Do List: protocol development, education development
- IT considerations
- Outcome measures: POSS documentation baseline, before, and after opioid administration
Implementation

Timeline
Roundup Meeting
Stakeholders - Director of Clinical practice, APP, IT, Nurse Credentialing, and Nursing
Sharing of Finding and Recommendations
Education
Data Collection

Evaluation of Impact

Lessons Learned

• Overlooked inpatient provider engagement
• More RRT involvement
• Include Academic Affiliated Institutions
• IT collect is not always feasible
Disseminate Findings

• Leadership
• Team
• Staff
• Sister Hospitals

Summary

• Build excitement by engaging staff and raising awareness or need for change
• Measurement of outcomes is essential to determine the impact that is made on healthcare quality, costs, and patient outcomes as a result of EBP changes
• Acceptance of new evidence based initiatives can be fostered among clinicians
• Sharing of structure, process, and outcome data that indicate performance and quality enhance patient outcomes and health care systems
• Celebrate your success!!!!!
References


