Improving Healthcare Quality, Reliability and Patient Outcomes with Evidence-based Practice and the ARCC Model

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In God We Trust,
Everyone Else Must Bring Data!
The State of Healthcare

- There are up to 200,000 unintended patient deaths per year (more than auto accidents & breast cancer)
- Patient injuries happen to approximately 15 million individuals per year
- Patients only receive about 55% of the care that they should when entering the healthcare system
The Cost of Poor Quality Healthcare

- Poor quality healthcare cost the United States about 720 billion dollars in 2008.
- Wasteful healthcare spending costs the healthcare system 1.2 trillion dollars annually.
- The U.S. healthcare system could reduce its healthcare spending by 30% if patients receive evidence-based healthcare.

RAND
Kaylin’s Story: Australian Dream Trip Turned Nightmare

A high reliability healthcare organization provides care that is safe and one that minimizes errors while achieving exceptional performance in quality and safety.

A healthcare organization that has measurable near perfect performance on quality of care, patient safety and efficiency.

It is recognized that EBP is a key strategy in creating a high reliability organization.
The Nurse Athlete Program
A Key Strategy for Enhancing Engagement, Reducing Stress, Fatigue and Burnout
What is Evidence?

- A collection of facts that grounds one’s belief that something is true (Dictionary.com 2007)

- External versus internal evidence
  - **External evidence**: generated from rigorous research
  - **Internal evidence**: generated from outcomes management; practice based evidence

- Does the evidence that is generated through rigorous research still hold when translated to the real world?
The So What Factor in an Era of Healthcare Reform

- Conducting research and EBP projects with high impact potential to positively change healthcare systems, reduce costs and improve outcomes for patients and their families.

- Key questions when embarking on a research study or an EBP project:

  **So what** will be the end outcome of the study or EBP project once it is completed?

  **So what** difference will the study or EBP project make in improving healthcare quality, costs or patient outcomes?
Evidence-based practice (EBP) is a problem solving approach to clinical practice that 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. Resources must be considered in the decision-making process as well.
The Merging of Science and Art: EBP within a Context of Caring & EBP Culture Results in the Highest Quality of Patient Care

Context of Caring

- Research Evidence & Evidence-based Theories
- Clinical Expertise and Evidence from assessment of the patient’s history and condition as well as healthcare resources
- Patient Preferences and Values

Clinical Decision-making

Quality Patient Outcomes

EBP Culture

© Melnyk & Fineout-Overholt, 2003
Acting on the Evidence

Strength of the Evidence + Quality of the Evidence = Confidence to Act!
The IOM Roundtable on EBM

- Formed in response to the 2003 IOM’s Committee on the Health Professions Education Summit recommendation that
  All healthcare professionals will be educated to deliver patient-centric care as members of an interdisciplinary team, *emphasizing EBP*, quality improvement approaches and informatics

- Ninety percent of healthcare decisions will be evidence-based by 2020

- The IOM Roundtable on EBP
Annual Guide to Clinical Preventive Services

◆ Evidence-based gold standard recommendations adapted for a pocket-sized book

◆ Formatted for clinicians to consult for clinical guidance in their daily practice

◆ Recommendations are presented in an indexed, easy-to-use format with at-a-glance charts
Why Must We Accelerate Evidence-Based Practice in Healthcare Providers and Systems Across the U.S?
Patient Outcomes With and Without Evidence-Based Practice

Traditional Practice

Evidence-Based Practice
Why Must We Accelerate EBP?

Despite an aggressive research movement, the majority of findings from research often are not integrated into practice.

- It takes approximately 17 years to translate research findings into practice.
- It is estimated that only approximately 10-15% of clinicians in the U.S. are consistently implementing EBP.
COPE (Creating Opportunities for Parent Empowerment): An Evidence-Based Program to Improve Outcomes in Critically Ill/Hospitalized Young Children, LBW Premature Infants & Parents
The COPE NICU Program
A 4 Day Shorter Length of Stay (LOS) for COPE Preterms Resulted in Cost Savings of $5000 per infant; 8 Day Shorter LOS for Preterms < 32 Weeks

*\(p < .05\)
Cost Analysis

- The net direct health care cost savings per child through NICU discharge after deducting the cost of the COPE intervention was $4,864.

- Further subgroup analyses for LOS based on birthweight revealed that COPE infants <1500 grams had an even shorter NICU length of stay (n = 90, 8.3 days), which resulted in even greater savings.
Why Must We Accelerate EBP?

- A high JASPA score
  (Journal of Associated Score of Personal Angst)

**J:** Are you ambivalent about renewing your Journal subscriptions?

**A:** Do you feel Anger toward prolific authors?

**S:** Do you ever use journals to help you Sleep?

**P:** Are you surrounded by piles of Periodicals?

**A:** Do you feel Anxious when your journals arrive?

Modified from BMJ (1995), 311, 166-1668
Practices routed in tradition are often outdated and do not lead to the best patient outcomes.

- Daily changing of IV dressings
- Perineal shaves before child birth
- Mayonnaise for head lice
- Sugar paste for pressure ulcers
- Albuterol delivery with nebulizers
The Steps of EBP

- **Step 0:** Cultivate a Spirit of Inquiry & EBP Culture
- **Step 1:** Ask the PICO(T) Question
- **Step 2:** Search for the Best Evidence
- **Step 3:** Critically Appraise the Evidence
- **Step 4:** Integrate the Evidence with Your Clinical Expertise and Patient Preferences to Make the Best Clinical Decision
- **Step 5:** Evaluate the Outcome(s) of the EBP Practice Change
- **Step 6:** Disseminate the Outcome(s)
A Critical Step in EBP: The PICO(T) Question

Ask the burning clinical question in \textit{PICO(T)} format

\textit{P}atient population

\textit{I}ntervention or Interest area

\textit{C}omparison intervention or group

\textit{O}utcome

\textit{T}ime

In \textit{premature infants (P)}, how does \textit{music (I)} versus \textit{massage (C)} affect \textit{oxygen saturation (O)} while in the \textit{NICU (T)}?
Levels of Evidence

- Evidence obtained from well-designed controlled trials without randomization and from well-designed case control and cohort studies
- Evidence from systematic reviews of descriptive and qualitative studies
- Evidence from a single descriptive or qualitative study
- Evidence from the opinion of authorities and/or reports of expert committees
- Evidence based clinical practice guidelines based on systematic reviews of RCTs
- Systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)

Usefulness for Cause & Effect Decision Making
Why Measure the Outcomes of EBP?

Outcomes reflect IMPACT!

- **EBP’s effect on patients**
  - Physiologic (complication reduction; health improvement)
  - Psychosocial (quality of life; depressive and anxiety symptoms; patient satisfaction with care)
  - Functional improvement

- **EBP’s effect on the health system**
  - Decreased cost, length of stay
  - Nursing retention / job satisfaction
  - Interdisciplinary collaboration
Major Barriers to the Advancement of EBP

- Lack of knowledge and skills
- Low comfort level with search techniques
- Perceived lack of time
- Challenges with critically appraising research
- Lack of organizational/administrative support
- Educational programs that continue to teach research the “traditional way” with a focus on producing instead of using evidence
- Negative attitudes toward research
Colleagues who are skeptical of or who do not believe in EBP
Findings from our Recent EBP Survey with U.S. Nurses
(Melnyk et al., 2012, JONA)

- More highly educated nurses reported being more clear about the steps in EBP and having more confidence implementing evidence-based care.

- The more years in practice, the less nurses were interested in and felt it was important to gain more knowledge and skills in EBP.
### Percent of Respondents from the ANA Survey Who Agreed or Strongly Agreed with the Following Statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBP is consistently implemented in my healthcare system</td>
<td>53.6</td>
</tr>
<tr>
<td>My colleagues consistently implement EBP with their patients</td>
<td>34.5</td>
</tr>
<tr>
<td>Findings from research studies are consistently implemented in my institution to improve patient outcomes</td>
<td>46.4</td>
</tr>
<tr>
<td>EBP mentors are available in my healthcare system to help me with EBP</td>
<td>32.5</td>
</tr>
<tr>
<td>It is important for me to receive more education and skills building in EBP</td>
<td>76.2</td>
</tr>
</tbody>
</table>
# The One Thing That Prevents You From Implementing EBP

<table>
<thead>
<tr>
<th>1. Time</th>
<th>Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Organizational culture, including policies and procedures, politics, and a philosophy of “that is the way we have always done it here.”</td>
<td>123</td>
</tr>
<tr>
<td>3. Lack of EBP knowledge/education</td>
<td>61</td>
</tr>
<tr>
<td>4. Lack of access to evidence/information</td>
<td>55</td>
</tr>
<tr>
<td>5. Manager/leader resistance</td>
<td>51</td>
</tr>
<tr>
<td>6. Workload/staffing, including patient ratios</td>
<td>48</td>
</tr>
<tr>
<td>7. Nursing (staff) resistance</td>
<td>46</td>
</tr>
<tr>
<td>8. Physician resistance</td>
<td>34</td>
</tr>
<tr>
<td>9. Budget/payors</td>
<td>24</td>
</tr>
<tr>
<td>10. Lack of resources</td>
<td>20</td>
</tr>
</tbody>
</table>
Evidence-Based Facilitators of EBP

- Individual knowledge and skills of EBP
- Beliefs that EBP improves care and outcomes
- Beliefs in the ability to implement EBP
- Mentors who are skilled in EBP
- Administrative/organizational support, including executives/managers that model and encourage EBP
Facilitators

Champions, mentors and nurse executives/managers who are passionate about EBP
A Vision with Specific Written Goals

We must begin with the end in mind
Ask yourself:

◆ What would you do if you knew you could not fail in the next 2 to 3 years?

◆ What is the smallest EBP change that you can make tomorrow that would have the largest positive impact for your patients’ outcomes?
SHOCK!

“You are asking me to implement EBP on top of everything else that I do?”
Stressed!
Change Fatigue
The Change Curve Model by Jeanie D. Duck

Knowing what to expect as part of the change process will enhance success!!!
Melnyk & Fineout-Overholt’s ARCC Model

**Potential Strengths**
- Philosophy of EBP (paradigm is system-wide)
- Presence of EBP Mentors & Champions
- Administrative Support

**Potential Barriers**
- Lack of EBP Mentors & Champions
- Inadequate EBP Knowledge & Skills
- Lack of EBP Valuing

**Clinicians’ Beliefs**
- About the Value of EBP & Ability to Implement the EBP Process

**EBP Implementation**
- Nurse Satisfaction
- Cohesion
- Intent to Leave
- Turnover

**Decreased Hospital Costs**
- Improved Patient Outcomes

* Scale Developed
+ Based on the EBP Paradigm & using the EBP process

© Melnyk & Fineout-Overholt, 2005
Evidence to Support ARCC

- **Study #1**: Descriptive correlational study with 160 nurses
- **Study #2**: A psychometric study of the EBP beliefs and EBP implementation scales with 360 nurses
- **Study #3**: A randomized controlled pilot study with 47 nurses in the VNS
- **Study #4**: A quasi-experimental study with 159 nurses in a clinical research medical center environment
- **Study #5**: A pre-experimental study with 52 clinicians at WHHS
Outcomes of Implementing the ARCC Model at Washington Hospital Healthcare System

- Early ambulation in the ICU resulted in a reduction in ventilator days from 11.6 to 8.9 days and no VAP
- Pressure ulcer rates were reduced from 6.07% to .62% on a medical-surgical unit
- Education of CHF patients led to a 14.7% reduction in hospital readmissions
- 75% of parents perceived the overall quality of care as excellent after implementation of family centered care compared to 22.2% pre-implementation
Creating a Culture to Implement and Sustain EBP: What Works
The only person that likes a change is a baby with a wet diaper!
Critical Components of an EBP Culture

♦ A philosophy, mission and commitment to EBP: there must be organizational commitment to advance EBP

♦ A Spirit of Inquiry: all health professionals are encouraged to question their current practices

♦ A Cadre of EBP Mentors: who have in depth knowledge and skills in EBP, mentoring others, and overcoming barriers to individual and organizational change
Critical Components of an EBP Culture

- **Administrative Role Modeling and Support:** leaders who value and model EBP as well as provide the needed resources to sustain it.

- **Infrastructure:** tools and resources that enhance EBP across the organization, such as computers for searching and up to date data bases.

- **Recognition:** individuals and units are rewarded regularly for EBP.
Nonsense . . . after 25 years, you deserve it!
Diffusion of Innovation

- Early Adopters: 13.5%
- Early Majority: 34%
- Late Majority: 34%
- Laggards: 16%
- Innovators: 2.5%
A key ingredient for success is persistence as there will be many “character-building” experiences along the way!!

“At least I have found 9000 ways that it won’t work.”

Thomas Edison
Persistence is a Key to Success

Theodor S. Geisel wrote a children’s book that was rejected by 23 publishers. The 24th publisher sold 6 million copies of the first “Dr. Seuss Book.”
Worldviews on Evidence-Based Nursing™
Linking Evidence to Action

Editor: Bernadette Mazurek Melnyk, PhD, CPNP/PMHNP, FNAP, FAANP, FAAN

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“... because we’ve always done it that way.”

Anonymous
Nothing Happens Unless First a Dream!

Carl Sandburg
Skeptics say “that will happen when pigs fly”
Research & EBP Innovators say “Pigs can fly!”
The Next 2-3 Years

What would you do tomorrow and in the next 2 to 3 years if you know that you could not fail?

Shoot for the moon, even if you miss, you will hit the stars

There Is A Magic In Thinking Big!

-Les Brown
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