Improving Quality of Care 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
- Only 5% of medical errors are caused by incompetence where 95% of errors involve competent persons trying to achieve right outcomes in poorly designed systems with poor uniformity
- 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

Implementing EBP: Real World Success Stories
The U.S. Navy Blue Angels
A High Reliability Organization

- Requires intense focus, leadership, outstanding communication, teamwork, data based practices, root cause analysis of errors, a safety and continuous learning culture, improvement processes and outcomes evaluation

http://www.youtube.com/v/ekctdCA9yts
A High Reliability Healthcare Organization

• 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

• Creating a culture and processes that radically reduce system failures and effectively respond when failures do occur is the goal of high reliability thinking
A Culture of Patient Safety

Essential Components (Sammer et al., 2010)

- Leadership
- Teamwork
- Evidence-based
- Communication
- Learning
- Just
Stay Tuned for the Nurse Athlete
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

EBP Culture

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

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Acting on the Evidence

• Strength of the Evidence + Quality of the Evidence = Confidence to Act
• Formed in response to the 2003 IOM’s Committee on the Health Professions Education Education Summit recommendation that

All healthcare professionals will be educated to deliver patient-centric care as members of an inter-disciplinary 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
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
Purpose: to determine the efficacy of the 15-session COPE Healthy Lifestyles TEEN (Thinking, Emotions, Exercise, Nutrition) Program on the healthy lifestyle beliefs, behaviors and mental health of 800 teens in Phoenix Area High Schools.
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
Why Must We Accelerate EBP?

- 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)
The EBP Process

Ignite the Spirit of Inquiry

Formulate a Searchable, Answerable PICO Question

Streamlined, Focused Search

Rapid Critical Appraisal & Synthesis of Evidence

Apply Valid, Relevant Evidence

Generate Evidence
  Internal: OM, QI
  External: Research

Evaluate the Outcome(s) and Disseminate the Findings

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A Critical Step in EBP: The PICO(T) Question

Ask the burning clinical question in *PICO(T)* format

- **P**atient population
- **I**ntervention or Interest area
- **C**omparison intervention or group
- **O**utcome
- **T**ime

In *premature infants (P)*, how does *music (I)* versus *massage (C)* affect *oxygen saturation (O)* while in the *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
- Systematic review or meta-analysis of all relevant randomized controlled trials (RCTs),
- Evidence-based clinical practice guidelines based on systematic reviews of RCTs
- Evidence obtained from at least one well-designed RCT
- 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

Usefulness for Cause & Effect Decision Making

Transforming health, Transforming lives
“Inspirational quotes are fine, but you’ll motivate more people with chocolate.”

Modified from Julia Sollenberger, University of Rochester
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
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

Transforming health, Transforming lives
for a Successful Change to System-wide 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
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

Implementation of ARCC Strategies
- Interactive EBP Skills Building
- EBP Rounds & Journal Clubs

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

Assessment of Organizational Culture & Readiness for EBP

Identification of Strengths & Major Barriers to EBP Implementation

Development & Use of EBP Mentors

* Scale Developed

+ Based on the EBP Paradigm & using the EBP process

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<table>
<thead>
<tr>
<th>Study #</th>
<th>Type of Study</th>
<th>Details</th>
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<tbody>
<tr>
<td>#1</td>
<td>Descriptive correlational</td>
<td>Study with 160 nurses</td>
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<tr>
<td>#2</td>
<td>Psychometric</td>
<td>Study of EBP beliefs and implementation scales with 360 nurses</td>
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<tr>
<td>#3</td>
<td>Randomized controlled pilot</td>
<td>Study with 47 nurses in the VNS</td>
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<tr>
<td>#4</td>
<td>Quasi-experimental</td>
<td>Study with 159 nurses in a clinical research medical center environment</td>
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<tr>
<td>#5</td>
<td>Pre-experimental</td>
<td>Study with 52 clinicians at WHHS</td>
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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

Innovators 2.5%
Early Adopters 13.5%
Early Majority 34%
Late Majority 34%
Laggards 16%

Culture shift
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

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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

-Les Brown

There Is A Magic In Thinking Big!
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