THE ROAD TO HERE…
THE RESEARCH JOURNEY

Lehigh Valley Health Network
Nursing Research 2014

“Empowerment – The Journey from Paper to Practice”

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Greetings from Philadelphia
OBJECTIVES

- Describe the progression of a clinical research path
- Characterize development of a research focus for clinical practice
- Define the process for ongoing clinical practice and clinical research
What is Nursing?

- “Nursing is the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations.”
  http://www.nursingworld.org/EspeciallyForYou/What-is-Nursing/default.aspx

Where does RESEARCH fit?

- individuals who put patients in the best possible condition for nature to act upon him.

Nightingale, 1860
NURSING SCIENCE
WHAT IS A RESEARCHER?

A researcher is a scholar who can, or will in time through learning and experience, demonstrate:

- Specialized knowledge / expertise with conceptual and intellectual capabilities
- Academic skills with the ability to compose and disseminate high-quality, clearly composed work
- Use skills that allow for the gathering, organization, analysis and interpretation of data
- Ambition; work to high standards, take initiative and responsibility
- Organization for procedures with balance that allows for effective productive collaboration
- Social skills that allows for effective and appropriate collegial exchanges
- Ability to adjust to different circumstances and situations as required

http://port.modernlanguages.sas.ac.uk/researcher

Are nurses natural Researchers?
NIH INTRAMURAL RESEARCH TRAJECTORY

http://irp.nih.gov/sites/default/files/nih-training-programs.png
NIH Clinical Research Pathway

Nursing Career Path in Research at the NIH Clinical Center

- Undergraduate Student
- New Graduate
- Clinical Research Nurse
- Research Nurse Coordinator
- Advanced Practice Nurse
- Pre-Doctoral/Doctoral Student
- Post-Doctoral Training
- Clinical Nurse Scientist

Clinical Research Nursing

http://clinicalcenter.nih.gov/nursing/images/Nursing_Career_Path.png
My Path

- After the BSN
  - NICU in NYC
  - NICU in Houston
  - PICU in Houston
  - PICU in California
  - PICU in DC

- Clinical Experience ➔ Course to understand Nursing / Clinical Research Questions
1993 MSN, University of Pennsylvania
1st Formally educated
Pediatric Critical Care NPs
NURSING SCIENCE

Prerequisites for health

Consequences of nursing care and treatment

Development of Nursing Science theory and methodology

Reactions and experiences of illness and poor health

http://www.liu.se/forskning/medicin/omvardnad?l=en
Publications


**Crit Care Med. 2000 Jul;28(7):2626-30.**
*Defining the role of the pediatric critical care nurse practitioner in a tertiary care center.*
Derengowski SL, Irving SY, Koogle PV, Englander RM.

**AACN Clin Issues. 2000 Nov;11(4):541-58; quiz 637-8.**
*Nutrition for the critically ill child: enteral and parenteral support.*
Irving SY, Simone SD, Hicks FW, Verger JT.

**AACN Clin Issues. 2005 Apr-Jun;16(2):178-84.**
*Munchausen syndrome by proxy: a case report.*
Lieder HS, Irving SY, Mauricio R, Graf JM.
Resistant

I am NOT going back to school!!!
“Feeding Behaviors and Energy Balance in Infants with Congenital Heart Disease”

*NIH/NINR R01 NR002093; MO1-RR00240; UL1-RR-024134), Principal Investigator: Barbara Medoff-Cooper, PhD, RN, FAAN

Study Aims:

- Describe feeding patterns
- Measure the energy needs of infants with CHD during the first year of life
- Determine contributions of disrupted / poor feeding organization and energy needs to unfavorable growth outcomes in infants with CHD
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Nurses are natural researchers?
Weight change in infants with a functionally univentricular heart: from surgical intervention to hospital discharge.
Medoff-Cooper B, Irving SY, Marino BS, García-Españoña JF, Ravishankar C, Bird GL, Stallings VA.

Poor post-operative growth in infants with two-ventricle physiology.
Anderson JB, Marino BS, Irving SY, García-Españoña JF, Ravishankar C, Stallings VA, Medoff-Cooper B.

Infant temperament and parental stress in 3-month-old infants after surgery for complex congenital heart disease.
Torowicz D, Irving SY, Hanlon AL, Sumpter DF, Medoff-Cooper B.
Challenges to conducting multicenter clinical research: ten points to consider.
Irving SY, Curley MA.
PMID: 18560285 [PubMed - indexed for MEDLINE]

…”Caring relationships that facilitate healing…”

Innovative strategies for feeding and nutrition in infants with congenitally malformed hearts.
Medoff-Cooper B, Irving SY.
PMID:19857355 [PubMed - indexed for MEDLINE]

…”It’s about feeding these babies…”
I am NOT going back to school!!!
Patterns of Weight Change in Infants with Congenital Heart Disease Following Neonatal Surgery: Potential Predictors of Growth Failure

SHARON Y IRVING, RN, MSN, CRNP
DISSERTATION DEFENSE
JUNE 29, 2011
Resting Energy Expenditure at 3 Months of Age Following Neonatal Surgery for Congenital Heart Disease

Irving SY, Medoff-Cooper B, Stouffer NO, Schall JI, Ravishankar C, Compher CW, Marino BS, Stallings VA. 

Findings:
- No difference in resting energy expenditure
- Infants with CHD were smaller and had lower growth z-scores
- Infants with CHD had decreased %body FAT which may contribute to poor growth in this population
Translational Research

Basic Science → Bedside → Practice

Type 1 TR

Type 2 TR

Clinical Research

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What is the reciprocal relationship

Clinical Research
Directly involves a person or population of persons

Clinical Practice
Performance of actions directly related to patient care/clinical services to patients

Interconnectedness
Building a Program of Research

Clinical research is undertaken to resolve uncertainty

A research program …
- defines that uncertainty
- establishes its relevance, &
- determines the feasibility of answering questions

**STEPS IN RESEARCH PROCESS**

1. Theoretical Framework
2. Hypothesis
3. Design Research Study
4. Identify Variables
5. Identify Population
6. Identify & Select Research Sites
7. Collect & Process Data
8. Analyze Data
9. Define Findings/Conclusions
10. Dissemination of Findings

*Ladner, 2008*
Question:

What are the energy needs of pediatric patients with a tracheostomy who are mechanically ventilated?

Background:

Prediction equations are known to be inadequate to determine energy needs in critically ill patients. Often the needs of these patients is different from both the critically ill and from typically developing children. There are many instances of over- or underfeeding these children as their needs, activity and growth are different from typically growing children.
CURRENT STUDY

Resting Energy Expenditure Measurement by Indirect Calorimetry (IC) in Children Ventilated via Tracheostomy: Feasibility and Ventilator Testing

Study Rationale:
- Indirect calorimetry (IC) to measure resting energy expenditure (REE) is preferable to standard equations
- REE measurement by IC has not been previously studied in ventilated children at CHOP
- IC, if feasible, has the potential to improve clinical outcomes in these vulnerable children by improving the efficacy and efficiency of nutritional support

Study Aims:
- To determine feasibility and tolerability
- To determine reproducibility of REE measurements
- To determine impact of ventilator variables on REE measurements by IC
Evaluation of the Safety and Efficacy of Use of TubeClear® in Pediatric Patients to Restore Patency to Occluded Enteral Access Devices

Investigational Device Study – Industry sponsored

Study Aims:

- Decrease intervention time interval from identification of occluded feeding tube to restoration of patency; comparison of standard treatment and use of device to restore patency in feeding tubes in children
- Determine safety and efficacy between device and standard treatment
CLINICAL RESEARCH

- Has a similar but different path to traditional
- Often is initially internally supported → volunteer time
- May see short term benefits of the project
- Follows a research process
- Conflicts can arise as the clinical provider versus the researcher
- Can be fun and very collegial

All research requires a passion for your topic…
PROGRAM OF RESEARCH

Nutrition during critical illness of infants and children

Current Funding Sources:
Internal Funding – CHOP

Benefit of Current Program of Study:
Change in Practice
Short term evaluation of care

Potential of external funding and multicenter clinical study
AIM HIGH!!!

There is nothing you cannot accomplish once you put your mind to it!!!

Clinical Research is Attainable
Thank You!

QUESTIONS???

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