THE ROAD TO HERE…
THE RESEARCH JOURNEY

Lehigh Valley Health Network
Nursing Research 2014

“Empowerment – The Journey from Paper to Practice”

Sharon Y Irving, PhD, RN, CRNP, FCCM
Assistant Professor, Pediatric Nursing
University of Pennsylvania, School of Nursing
Nurse Practitioner, Division of Anesthesiology and Critical Care Medicine; Critical Care Nursing
The Children’s Hospital of Philadelphia
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

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

  Nightingale, 1860
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
RESEARCH TRAJECTORY

Mentored Projects

- Institutional Training Grant
  - Role: Pre-doc

Mentored Projects

- Individual Training Grant
  - Role: Pre/Post-doctoral

Postdoctoral Fellowship

- Role: PI
  - With Senior faculty mentors

NIH - R25 Pilot

- Role: PI
  - Co-Investigators As Mentors

Independent Funding

- Funded Researcher
  - CDC
  - NIH
  - RWJ

Role: PI
NIH Clinical Research Pathway

Nursing Career Path in Research at the NIH Clinical Center

- Nursing Science
  - Undergraduate Student
  - New Graduate
  - Clinical Research Nurse
  - Research Nurse Coordinator
  - 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
- Reactions and experiences of illness and poor health
- Consequences of nursing care and treatment
- Development of Nursing Science theory and methodology

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


**Defining the role of the pediatric critical care nurse practitioner in a tertiary care center.**  
Derengowski SL, Irving SY, Koogle PV, Englander RM.

**Nutrition for the critically ill child: enteral and parenteral support.**  
Irving SY, Simone SD, Hicks FW, Verger JT.

**Munchausen syndrome by proxy: a case report.**  
Lieder HS, Irving SY, Mauricio R, Graf JM.
Resistant

I am NOT going back to school!!!
Project Manager:

“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?

http://port.modernlanguages.sas.ac.uk/researcher
CICOP CALLS INTERACTIVE PENN

3rd Flu Call
- 1 wk -> 2 days prior to visit
- 4th Flu Call
- 2 wk prior to visit
- 5th Flu Call
- 1 mo prior to visit
- 6th Flu Call
- 2 mo prior to visit
- 7th Flu Call
- 3 mo prior to visit

Clinic Charts
- Scanning (bar codes)
- Scheduling ( appointments )
- EDN (EDN) labels

Clinic (15) Day
- Consent/GC/SCH Blood
- Buccals (1st/2nd)
- Assessments
- Kullen
- ADOS
- Ad
- Vineland

Dermatology Exam
- Blood Draw
- Diet/Stool
- Questionnaires
- Supplies

Post Clinic F/U Letter
- Trafficking
- GIS
- Data Entry
- IRB (KITEMARE!!!)

Following Visit
- Scheduling
- Data Entry
- IRB

Quality Control
- Diet/Stool
- Data Entry
- Supplies

Recruitment Process
- PM
calls
- Track
- Travel

Enrollment
- 1st Flu Call
- CGI (Sch)
- Questionnaires

Data Collection
- F/U Letter
- Post Collection
- Measured Medication
- PCR Testing

Data Cleaning
- Requests
- MRA
- GC
- Financial Tracking
- 3rd Flu Call
- 2nd Visit
- 2nd Question
- Howe Visit
- 3rd Flu Call
- 1st Flu Call
- CGI (Sch)
- Questionnaires
RELATED PUBLICATIONS

Weight change in infants with a functionally univentricular heart: from surgical intervention to hospital discharge.

Poor post-operative growth in infants with two-ventricle physiology.

Infant temperament and parental stress in 3-month-old infants after surgery for complex congenital heart disease.
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…”
Resistant

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


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 → Clinical Research → Type 2 TR
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/clincial 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

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???

ysha@nursing.upenn.edu
irvings@email.chop.edu