Examples and narrative describing nursing research projects initiated, completed and ongoing. Explain how the results of each completed project have been incorporated into evidence-based practice.

To quote the Senior Vice President for Patient Care/Chief Nurse from the May 8, 2007 Annual Yvonne L. Munn Nursing Research Lecture, “Nursing research is alive and well at the Massachusetts General Hospital.” Below is just a subset of examples of nursing research initiatives that have been initiated, are underway, or have been completed at the MGH. For the studies that have been completed, the findings and impact on practice is noted.

I. In Process:

**Study Name: The Effect of Therapeutic Touch on Bio-Behavioral Stress Markers in Vascular Surgical Patients**

**Researcher(s):** Mandi Coakley, RN, PhD, Staff Specialist

**Funding:** Yvonne L. Munn Post Doctoral Fellowship

**Aim of Study:** To learn about the effect of Therapeutic Touch on bio-behavioral stress markers in patients who have undergone vascular surgery. This study will look at cortisol and natural killer cell levels immediately before, immediately after, and one-hour after a therapeutic touch (TT) treatment in patients who have had vascular surgery within seven days to determine if TT has an impact on surgical recovery.

**Status:** Data collection in process.

**Study Name: Translating Fall Risk Status into Interventions to Prevent Patient Falls**

**Researcher(s):** Patricia Dykes, RN, PhD, Senior Nurse Informatician and Diane L. Carroll, RN, PhD, Nurse Researcher

**Funding:** Robert Wood Johnson

**Aim of Study:** To develop a Fall Prevention Toolkit based on improved communication strategies

**Status:** Ongoing

**Study Name: The Nursing Ambulatory to Hospital Transitions (NAHT) Program**

**Researcher(s):** Barbara Roberge, RN, PhD, Principle Investigator, Ellen Mahoney, RN, DNSc, Keneth Minaker, MD, Sung-Kiang Chuang, MD, Barbara Moskowitz, MSW
Funding: Robert Wood Johnson Foundation: Interdisciplinary Nursing Quality Research Initiative (INQRI) ($300,000 over two years)

Aim of Study: To test a model of care coordination during the transition from the community to hospitalization and its impact on nurse judgment and nurse sensitive outcomes during hospitalization.

Status: Ongoing; Year two of a two-year study

Study Name: Non-Violent Action for Peace and Justice: Israeli and Palestinian Combatants for Peace

Researcher(s): Donna Perry, RN, PhD, Professional Development Coordinator, Co-Director of the Thomas Durant, MD, Fellowship in Refugee Medicine

Funding: Humane Society ($25,000)

Aim of Study: To investigate the decision-making process of members of Combatants for Peace with regard to joining the group and adopting nonviolent methods.

Status: Ongoing

Study Name: Three Methods of Wound Volume Measurement

Researcher(s): Virginia Capasso, RN, PhD, APRN, BC, Javier Romero, MD, Jane Kelley, RRT, RVT, Barbara Hazard, RN, PhD, FAAN

Funding: Yvonne L. Munn Post-Doctoral Research Fellowship; Mallinkrodt General Clinical Research Center

Aim of Study: To compare the volume of deep cutaneous wounds (>0.5 cm) using three methods of measurement: 1) filling the wound bed covered with transparent occlusive film (OpSite) with isotonic fluid (cc), using the Harvard 2TM Dual Syringe Pump, 2) scanning the fluid-filled wound with a compact, hand-held 3DUS device, BladderScan TM BVI 6100 (Diagnostic Ultrasound, Bothell, WZ( with a 3.7 MHz transducer, and 3) scanning the fluid-filled wound with 3DUS using the GE LOGIQ 700 ultrasound machine equipped with a MHz curved transducer with #D imaging software (GEMS).

Status: Ongoing

Study Name: Preclinical Markers of Impending Pressure Ulcer Formation
Researcher(s): Virginia Capasso, RN, PhD, APRN, BC, Ellen Mahoney, DNSc, RNCS, Michael T. Watkins, MD, Anna Yaroslavsky, PhD

Funding: Association for the Advancement of Wound Care

Aim of Study: To identify and describe morphological changes in the skin and subcutaneous tissues on the pressure-loaded surface of the heel and whether the tissues changes correlate with increased levels of pro-inflammatory cytokines in the plasma and transcutaneously-expressed chemicals.

Status: Awaiting approval by Human Subjects Review Committee

II. Completed:

Study Name: Measuring Psychological Insulin Resistance: Barriers to Insulin Use

Researcher(s): Mary Larkin, RN, MSN, CDE, Virginia Capasso, RN, PhD, APRN, Ellen Mahoney, DNSc, RNCS, Chien-Lin Chen, BS, Barbara Hazard, PhD, RN, FAAN, Enrico Cagliero, MD, David Nathan, MD

Funding: Yvonne L. Munn Nursing Research Grant and Pfizer Pharmaceuticals

Aim of Study: To describe the psychosocial barriers to starting insulin therapy in Type 2 Diabetes

Status: Complete

Findings: One third of the study sample was resistant to starting insulin. Main reasons reported were feelings of failure, self-efficacy, and fear of painful injections.

Impact on Practice: This study has helped to clarify the reasons that patients are reluctant to start insulin therapy. Although a common finding was fear of painful injections, other prevailing attitudes for reluctance were feelings of failure and thinking that they would not be able to handle the demands of insulin therapy. The knowledge gained through this research has changed practice by reinforcing the importance of exploring attitudes, fears or beliefs that may be obstacles to starting insulin therapy. When a patient expresses reluctance to start insulin when it is clinically necessary, it is quite possible that they may be experiencing one of these commonly expressed attitudes, most of which can be easily addressed in clinical practice through education. Tailored interventions such as showing that insulin syringes are so small that they are practically painless, providing an insulin pen device which is a very easy to use as opposed to vials and syringes, or explaining that Type 2 Diabetes is a progressive disease and that at least 60% of people will require insulin regardless of how they have managed their illness, are a few examples. This research has heightened the awareness of the importance of encompassing psychological care in practice, thereby facilitating a trusting partnership between nurse and patient in the shared journey toward successful diabetes
management. (Refer to attachment RD 4.a. to review an article published in the Pittsburgh Post-Gazette in which Principle Investigator, Mary Larkin, RN, MSN, CDE, is quoted on the topic of “fear of needles” and the results of this study.)

**Study Name: Quality of Life in Patients Three and Four Years after Insertion of Implanted Cardioverter Defibrillator (ICD)**

**Researcher(s):** Diane L. Carroll, RN, PhD and Glenys Hamilton, RN, DNSc

**Funding:** American Association of Critical Care Nurses

**Aim of Study:** To describe quality of life three and four years after Insertion of an Implanted Cardioverter Defibrillator (ICD)

**Status:** Complete

**Findings:** Though ICD recipients appear emotionally vulnerable at time of implantation, this study demonstrates emotional adjustment during the first 6 months.

**Impact on Practice:** These data can be shared by nurses at time of implantation with the addition of support group and cardiac rehabilitation program information that can facilitate this transition.

**Study Name: Inpatient Nursing Documentation and Communication Using Wireless Devices**

**Researcher(s):** Patricia Dykes, RN, PhD and Diane L. Carroll, RN, PhD

**Funding:** Partners HealthCare Information Systems Research Council

**Aim(s) of Study:** 1) To evaluate the Partners standard patient assessment module at the point of care; 2) To evaluate feasibility of the use of wireless devices for point-of-care collection of patient assessment data and information from multiple perspectives including ease of use, completeness and quality of data capture, impact on workflow and nurse satisfaction.

**Status:** Complete

**Findings:** There is high nurse satisfaction with wireless devices. Greater completeness of patient assessment documentation across the standard question sets to support tracking of nursing sensitive and quality patient outcomes and follow-through were found in assessments completed with electronic tools. Differences in completion between electronic and paper tools were very significant for the following measures (p<.001): fall prevention, pressure ulcer prevention, pain management, aspiration prevention, malnutrition prevention, and DVT/VTE prevention. Differences were significant (p<.05) for completion of suicide prevention assessment.
Impact on Practice: Findings from this study were used to inform functional and device requirements for electronic patient assessment. Of note, multiple secure sign-on procedures and non-integration of patient assessment module with patient problem list and interdisciplinary plan of care were barriers to workflow efficiency. While full integration was not possible for this study because the problem list and plan of care are components of a paper record, the Acute Care Documentation team used feedback from this study to inform core functional and device requirements for point-of-care electronic documentation.

Study Name: The Role of Fatigue and its Relationship to Quality of Life in Elders with Heart Failure

Researcher(s): Barbara Roberge, RN, PhD, Principle Investigator, Kenneth Minaker, MD, Ana Curry, MD, Gail Chin, BA, Sung-Kiang Chuang, MD

Funding: Yvonne L. Munn Post-Doctoral Fellowship ($15,000)

Aim of Study: To identify prevalence and characteristics of fatigue in elders with heart failure and impact on quality of life.

Status: Complete

Findings: Fatigue is a prevalent symptom in elders with heart failure and negatively impacts quality of life. Sleep disturbance is an important quality of life issue in this population and nurses need to help manage this important symptom as it impacts quality-of-life.

Impact on Practice: These findings were presented at the Gerontology Society of America (GSA) Conference. The lead researcher personally interviews patients with heart failure about their fatigue and discusses interventions to alleviate the fatigue. The findings were also discussed at several multidisciplinary team meetings at the Senior HealthWise Practice at MGH.

Study Name: Efficacy of a Telephone Nurse Coached Intervention during Recovery at Home after Same Day Arthroscopic Surgery

Researcher(s): Dorothy A. Jones, EdD, RNC, FAAN, Principal Investigator, Kelly Grealish, RN, Marie Rosseau, RN, Jane Flanagan, RN, PhD, in conjunction with Boston College faculty: Sr. Callista Roy, RN, PhD, Mary Duffy, RN, PhD, Jean O’Neil, RN, PhD, Rita Olivieri, RN, PhD

Funding: NIH – NINR R-15 to Boston College with Sub-Contract to MGH
**Aim of Study:** To test the efficacy of a follow-up nurse-coached intervention (NCI) delivered the night of surgery, 24, 48, 72 hours and 1 week post surgery on function, symptom distress, cognitive processing and coping.

**Status:** Completed; Data analysis in process. Initial results indicate significant differences between coached and non-coached group around symptom distress and function.

**Findings/Impact on Practice:** Addresses the growing body of research that support telephone follow-up during recovery at home; Supports the timing of the phone call after surgery between 24 and 48 hours when patients experience the most distress; Effective pain management early in the recovery process improves overall function; knowing the nurse would be calling reduced calls to MD or visits to the ER.

**Study Name:** Evaluation of Collaborative Governance

**Researcher(s):** Susan Lee, RN, PhD

**Funding:** MGH

**Aim of Study:** To evaluate the impact of structural and psychological empowerment among Collaborative Governance and non-Collaborative Governance clinicians across MGH Patient Care Services.

**Status:** Complete

**Findings:** Collaborative Governance members continue to score significantly higher on empowerment measures than their counterparts who are not members of Collaborative Governance Committees.

**Impact on Practice:** This study underscored the need to critically review the processes, (e.g. term limits). The implications for practice are that nursing leaders should support strategies for empowerment, which has been shown to positively impact practice through higher quality and safer patient care.

In 1998, the Yvonne L. Munn Nursing Research Grant Program, was established. It was designed to support research endeavors of MGH nursing leadership and Staff Nurses by funding studies to explore their researchable questions. What follows is a listing of research grants awarded since the inception of this program. Staff nurses are highlighted in yellow to illustrate the opportunity provided to them to partner with more experienced researchers to learn the research process.
Yvonne L. Munn Nursing Research Grants

2007

• The Transition Experiences of Entry into Practice for First and Second Career Nurses - Donna Jenkins, RN, MSN, Mary Ellin Smith, RN, MS
• Evaluation of Basic Arrhythmia Knowledge Retention and Clinical Application by Registered Nurses - Laura Sumner, MSN, APRN, BC, ONC Shelia Burke, RN, MSN, NP, Mary McAdams, RN, MSN, Lin-Ti Chang, RN, MS

2006

• The Effects of Two Types of Informational Reports on the Anxiety levels of Waiting Family Members During Invasive Cardiac Procedures - Kelly Trecartin, RN, Nicole Spano-Niedermeier, RN
• Psychological Insulin Resistance: A Study of Patients’ Attitudes, Perceptions and Fears - Mary Larkin, RN, MSN, CDE, Virginia Capasso, RN, PhD, APRN, Ellen Mahoney, DNSc, RNCS, Chien-Lin Chen, BS, Barbara Hazard, PhD, RN, FAAN, Enrico Cagliero, MD, David Nathan, MD

2005

• Music as a Therapeutic Intervention in Care of Neuromedical and Neurosurgical Patients - Alyonna Runyans, RN, MA, Anastasia Michaelidis, RN, Marion Phipps, RN, MS, Whitney Foster, RN, BA, Jennifer O’Neill, RN, BSN, Diane Carroll, RN, PhD

2004

• Recognition and Prevalence of Delirium in Patients Who Fall While Hospitalized in the Acute Care Setting - Barbara Guire, RN, MS, CS, Jennifer Repper-Delisi, RN,MS, CS, Laura Sumner, MSN, APRN, BC, ONC, Constance Murphy Cruz, RN, MS, Erin Kelleher, RN, BSN, Monique Mitchell, RN, MS, CS, Susan Kilroy, RN, MS, CS, Mary Lussier-Cushing, RN, MS, CS, Leslie Wlodyka, RN, BSN, Joan Fitzmaurice, RN, PhD
• Evaluating the Drug Dosage Calculation Guide on the Registered Nurse’s Achievement Scores and Multi-Step Calculations on an Orientation Medication Assessment - Laura Sumner, MSN, APRN, BC ONC, Mary McAdams, BSN, RN, BC, Gail Alexander, BSN, CCRN
• Family-Centered Care at MassGeneral Hospital for Children: How are We Doing and Just How Important is it? - Mary Lou Kelleher, RN, MS

2002-2003

• Evaluating the Environment of Care - Peggy Doyle Settle, RNC, PhD
• Development and Psychometric Evaluation of a Measure of Opinions of Pregnant Women with HIV - Lynda Tyer-Viola, RNC, MSN

2001

• Family Presence During Resuscitation in the Emergency Department - Patricia Mian, RN, MS, CS, Susan Whitney, RN, BS, Susan Warchal, RN, Debbianne Shahidi, RN, BSN
• Prolonged Mechanical Ventilation and Weaning: A Patient Profile - Susan R. Gavaghan, RN, MSN

2000

• Exploring the Meaning of Cardiopulmonary Resuscitation as a Life Sustaining Treatment for Elderly Patients in Acute Care: The Perspectives of Nurses and Physicians - Lillian Ananian, RN, MS, Stephanie Gill, RN, BSN, Annette Levitt, RN, MS, Roberta Raskin, RN, MSN, Susan Sheridan, RN, BSN, Susan Chase, RN, EdD, Sioban Haldeman, RN, MS, Laura Mylott, RN, PhD, Ellen Robinson, RN, PhD, Maria Winne, RN, MS, Johanna Cooper, BA, MSM, Edward Lowenstein, MD, Beth Nagle, RN, BSN, CS, Marissa Shea, RN, BS, Jian Zang, RN, BSN
• An Evaluation of the Pre-Admission Nursing Practice model Utilizing a Phenomenological Approach - Jane Flanagan, RNC, PhD, Joan Braccio, RN, BSN, Janet Quigley, RN, MSN, Claire Farrell, RN, Regis MacDonald, RN, BSN, Hilda Morrison, RN, Donna Slicis, RNC, MSN, Patricia Zelano, RN, JD

1999

• Comparison of Two Hemofilters Used for Continuous Venovenous Hemofiltration/Diafiltration - Maryliz Bilodeau, RN, MS, CCRN, CS, Katie Brush, RN, MS, CCRN, Nicole Macomber, RN, BS
• Capacity for Direct Attention and Psychological Distress in Patients Undergoing Percutaneous Coronary Intervention for Coronary Artery Disease - Diane Carroll, RN, PhD, Lynne Chevoya, RN, CS, Jessica Hogarth Murray, RN

1998
Identification Through Nursing Assessment of Malnutrition in the Heart Failure Patient - Diane Carroll, RN, PhD, Colleen Higgins, RN, BS, Sandi Nicole, RN, Kristin Mulligan, RN, MS, Sharon Sullivan, RN, MS, Joanne Ciesielski, RN, BS
Injecting insulin a fearful point for some
Wednesday, September 26, 2007
By Mark Roth, Pittsburgh Post-Gazette

Technically, it's known as belonephobia.

In common parlance, that's a fear of needles, and whether someone has a full-blown phobia or not, it presents a big challenge to diabetes health care providers.

"It's a real issue," said Dr. Mary Korytkowski of UPMC's Center for Diabetes and Endocrinology.

"Needle fear is more common than many people realize," she said, "because a lot of patients refuse to tell us they have it. Some people, on the other hand, will outright refuse to go on insulin because it's an injection."

With the spreading epidemic of type 2 diabetes, needle fear may become an increasingly pressing issue, because experts estimate that nearly 60 percent of type 2 patients eventually will need to go on insulin.

While type 2 diabetes is often described as a disease in which people's bodies resist the effects of insulin, it is also a disease of producing too little of the hormone.
By the time most people are diagnosed with the disorder, they already are secreting only half the normal amount of insulin, Dr. Korytkowski said, and that output will decline steadily over the years, even with help from insulin-promoting drugs.

Last year, the U.S. Food and Drug Administration approved the first inhalable form of insulin, called Exubera, by Pfizer Inc., but analysts have said it may be too expensive to easily replace injectable insulin in the foreseeable future.

A 1995 study in the journal Family Practice estimated that up to 10 percent of the population may have a strong enough fear of needles to cause a "vasovagal reflex" -- ringing in the ears, dizziness and fainting -- after getting a shot.

And while some believe that figure is too high, needle fear is still a strong factor in people who resist taking insulin, said Mary Larkin, a registered nurse who heads clinical research at the Massachusetts General Diabetes Center in Boston.

In a study this year, Ms. Larkin and colleagues found that out of 100 people with type 2 diabetes, 33 said they would be unwilling to take insulin if their doctors recommended it, and 60 percent of that group said they were afraid of needles.

But other fears about going on insulin were even stronger, Ms. Larkin said.

Eight out of 10 resistant patients believed their lives would be much less flexible if they had to take regular insulin injections, for instance, and seven out of 10 said going on insulin would be an admission that they had failed to manage their disease properly.

Because type 2 patients usually start out with recommendations for pills and diet and exercise changes, insulin psychologically becomes "almost like the dreaded thing they're trying to avoid," Dr. Korytkowski said.

"I think the medical community may be responsible in part for that fear," she said. "Doctors have used insulin as a threat in the past, saying 'You'll have to go on insulin if you don't take care of yourself.'"

When she encounters a patient nowadays with a strong fear of needles, Dr. Korytkowski said, she will recommend the inhaled insulin or a device like the I-Port, a circular base that only has to be inserted in the skin once every three days, and then can be used as a no-pain port for insulin injections.

Dr. Arnold Slyper, a pediatric endocrinologist in Allentown, Lehigh County, said he prescribes the I-Port more for the convenience of his young patients than to combat their fears.

But he does see children who fear needles, and much of the time, he notices the same reaction in their parents.
One of the best ways to overcome injection fears is to get a child or an adult to quickly try a saline injection with today's syringes, said Karen Harouse-Bell, a diabetes educator at the Latrobe Hospital Excela Health Diabetes Center.

"I think a lot of the fear in some people is based on their past history of seeing relatives who had diabetes and how long the needles used to be. The needles today are much shorter, and if I have people take the saline right away, they're like, 'That didn't hurt at all.' "