

Cohort 3 Finalists

The Impacts of Nurse Staffing, Skill Mix, and Experience on Quality and Costs in Long-Term Care

Palo Alto Institute for Research and Education

Texas Woman's University

The Effect of off-peak Hospital Environments on Nurses' Work: an Institutional Ethnography

University of California, San Francisco

Impact of Medical Surgical Acute Care Microsystem Nurse Characteristics and Practices on Patient Outcomes

University of Maryland, Baltimore

The Res-Care-AL Intervention Study

University of Minnesota

Multidisciplinary Organization and Outcomes for Chronic Heart Failure Patients in the VA

University of North Carolina, Greensboro

The Effects of Nurse Presenteeism on Quality of Care and Patient Safety

University of Texas Health Science Center, San Antonio

Small Troubles, Adaptive Responses [STAR]: Fostering a Quality Culture in Nursing

Washington State University

Empowering Home Care Nurses to Efficiently Resolve Medication Discrepancies

**Interdisciplinary Nursing Quality Research Initiative (INQRI) – Year 3
Full Proposal Executive Summaries**

Application ID 125484
Applicant Organization Palo Alto Institute for Research and Education

Project Title The Impacts of Nurse Staffing, Skill Mix, and Experience on Quality and Costs in Long-Term Care

Funding Requested \$299990

Nursing Scholar
Patricia Stone, PhD
Columbia University
617 W. 168th St
New York, NY 10032
Phone: 212 305 1738
Fax: 212 305-6937
ps2024@columbia.edu

Non-Nursing Scholar
Ciaran Phibbs, PhD
VA Palo Alto Health Care System
795 Willow Road
Menlo Park, CA 94025
Phone: 650-493-5000 x22813
Fax: 650-617-2639
cphibbs@stanford.edu

Executive Summary

The Impacts of Nurse Staffing, Skill Mix, and Experience on Quality and Costs in Long-Term Care INQRI CFP Topic Area: The Effect of the Work Environment on the Efficiency of Nursing Care The long-term care (LTC) segment of the healthcare market, a significant and growing share of healthcare expenditures, is unique in that care is primarily provided by nurses. The purpose of this project is to examine whether there is a causal relationship between the nursing input (staffing and human capital characteristics) and patient outcomes in LTC facilities, and second, to analyze efficiency by studying the tradeoffs between nursing personnel costs and cost savings due to improved patient outcomes. Using a unique longitudinal database of the entire population of LTC facilities operated by the Veterans Administration in fiscal years 2003-2007, we will link a variety of patient outcomes to detailed measures of the nursing input, controlling for other factors that can influence patient outcomes. Site visits will be conducted to provide key institutional knowledge and inform the statistical analysis. Multivariate fixed-effect regressions will be estimated using monthly data. The cost savings that can be achieved by improving patient safety will be estimated and compared to the increase in nursing personnel costs that are required to achieve the increased safety. This project is co-led by an economist and a nurse researcher and extends the work of a successful interdisciplinary team. To help ensure clinical relevancy and assist with dissemination and translation of results into practice/policy, an advisory group of key stakeholders has been engaged early in the research process. Findings from the study will be presented at a variety of healthcare conferences, will be published in journals targeting practitioners, policymakers and researchers, and will be shared with key legislative committees and organizations that are influential in setting healthcare policy.

**Interdisciplinary Nursing Quality Research Initiative (INQRI) – Year 3
Full Proposal Executive Summaries**

Application ID 123798
Applicant Organization Texas Woman's University

Project Title The effect of off-peak hospital environments on nurses' work: an Institutional Ethnography

Funding Requested \$299953

Nursing Scholar
Patti Hamilton, PhD, RN
Texas Woman's University
PO Box 425498
Denton, TX 76204-5498
Phone: 940 898 2430
Fax: 940 898 2437
phamilton@twu.edu

Non-Nursing Scholar
Gretchen Gemeinhardt, PhD, MBA
P&G Partners
717 Rutland
Houston, TX 77007
Phone: 7136618001
Fax: 713 6618001
profgretchen@aol.com

Executive Summary

The effect of off-peak hospital environments on nurses' work: an institutional ethnography, addresses the INQRI Topic Area: The Effect of Work Environments on the Efficiency of Nursing Care. This innovative project uses Institutional Ethnography (IE) to situate nursing in the center of an interdisciplinary approach to learn how and why off-peak work environments are different, and how they affect nurses' work and patient care. We know mortality increases for many patients on weekends or nights. Two types of data will be collected. Level I data will be transcripts from individual and focus-group interviews asking such questions as: What do you do here at night (or on the weekend)? Why do you do it that way? From analysis of Level I data in Year One, the research team will identify Level II data to be collected and analyzed in Year Two. These data include managerial policies, documents, and other texts, used to improve quality and efficiency by standardizing and controlling the work of nurses. Level I and Level II data will provide insight into the black box of the off-peak effect on mortality. A prominent Canadian researcher, Marie Campbell, will assure the research is consistent with IE's theoretical assumptions and methodological principles. Dr. Campbell's findings from other IE investigations of nursing have informed the decisions of Canadian policy-makers, administrators and nurses. Our project will provide researchers in the US and elsewhere with insight into how to account for temporal variations in nurses' work environment when specifying causal models linking nursing care to patient outcomes. The project also will provide stakeholders with materials that help them identify, evaluate, and anticipate effects of initiatives to improve efficiency, effectiveness, quality and cost on nursing care provided during off-peak periods. An active Stakeholders' Council has endorsed the study design and will assist with dissemination of results.

**Interdisciplinary Nursing Quality Research Initiative (INQRI) – Year 3
Full Proposal Executive Summaries**

Application ID 129015
Applicant Organization UCSF School of Nursing

Project Title Impact of Medical Surgical Acute Care Microsystem Nurse Characteristics and Practices on Patient Outcomes

Funding Requested \$299972

Nursing Scholar

Nancy Donaldson, RN, DNSc
UCSF School of Nursing
2 Koret Way, N631, Box 0610
San Francisco, CA 94143-0610
Phone: 415-502-1826
Fax: 415-476-8899
nancy.donaldson@nursing.ucsf.edu

Non-Nursing Scholar

Carolyn Aydin, PhD
Cedars Sinai Medical Center
Nursing Research & Development, Room
2021
Los Angeles, CA 90048
Phone: (310) 423-3694
Fax: (310) 423-0281
carolyn.aydin@cshs.org

Executive Summary

Impact of Medical Surgical Acute Care Microsystem Nurse Characteristics and Practices on Patient Outcomes The aim of the California Nursing Outcomes Coalition (CalNOC) INQRI project is to develop an empirically derived predictive model examining individual and collective effects of unit level nurse workload, staff nurse characteristics and selected risk assessment and preventive intervention processes of care on variance in nurse sensitive outcomes of acute care medical-surgical units. The study uses a community-based action research methods in a non experimental design that integrates quantitative and qualitative (observational) methods. This study will be conducted in 100 medical surgical acute care units drawn from hospitals of the CalNOC network over a 24 month period. The outcomes studied include, (1) incidence of falls and fall related injuries, (2) prevalence of hospital acquired pressure ulcers (HAPU), (3) prevalence of medication administration errors, and (4) prevalence of peripherally inserted central catheter (PICC) associated blood stream infections. As a secondary aim, we will add a new measure, Hospital Acquired Stage 3-4 Pressure Ulcer Incidence, to the CalNOC dataset. Integrating this publicly reported indicator into the CalNOC dataset will enable timely study of the association between HAPU prevalence and incidence, and exploratory investigation of the sensitivity of both HAPU measures to variation in nurse workload, staff expertise and selected clinical risk assessment and prevention practices, and the predictive power of early stage prevalence for late stage incidence. The aims of the CalNOC INQRI study are responsive to the goals of RWJF's INQRI, advancing understanding of how nurses contribute to and improve quality of care. Project dissemination will leverage CalNOC's regional, national and international partners and policy makers, and will reach out to diverse stakeholders through briefings, forums, presentations and publications.

**Interdisciplinary Nursing Quality Research Initiative (INQRI) – Year 3
Full Proposal Executive Summaries**

Application ID 123274
Applicant Organization University of Maryland, Baltimore

Project Title The Res-Care-AL Intervention Study

Funding Requested \$299996

Nursing Scholar

Barbara Resnick, PhD, CRNP
University of Maryland, Baltimore
655 West Lombard Street
Baltimore, MD 21201
Phone: 4107065178
Fax: 4107060344
barbresnick@aol.com

Non-Nursing Scholar

Sheryl Zimmerman, PhD, MSW
University of North Carolina Chapel Hill
301 Pittsboro St.
CB#3550
Chapel Hill, NC 27599-3550
Phone: 9199626417
Fax: 9199663829
sheryl_zimmerman@unc.edu

Executive Summary

This project, entitled The Res-Care-AL Intervention Study, is an Investigator Initiated Project and is a randomized controlled trial to test a restorative care intervention for assisted living (AL). The project incorporates patient centered outcomes (falls); nursing centered outcomes (restorative care services); and system-centered outcomes (staff turnover) as designated by the National Quality Forum. The primary aim of this study is to maintain or improve the residents' physical activity, physical status, function, and length of stay in the facility. The secondary aim related to residents focuses on mood, life satisfaction, resilience, self-efficacy and outcome expectations, social-support for exercise, and person-environment fit. The secondary aim related to nursing assistants (NAs) focuses on restorative care activities, self-efficacy and outcome expectations, job satisfaction and employment status. Res-Care-AL will be coordinated by a Restorative Care Nurse (RCN) with support from other disciplines. The RCN will work with a facility designated restorative care coordinator (RCC) for 15 hours weekly for 6 months, 8 hours weekly for 3 months and 4 hours weekly for the final 3 study months to implement the following activities: (1) Environmental assessment; (2) Education of staff, administration, families and residents; (3) Setting restorative care goals; and (4) Making it happen. The RCN will mentor the RCC to champion restorative care at the end of the study. Data will be collected at baseline, 4, 12, and 16 months (sustainability data). Control sites will receive education about restorative care (Res-Care-ED). Four AL settings will be randomized and a total of 100 residents and 50 NAs recruited. The analyses will be done using Generalized Estimating Equations and will demonstrate how quality nursing care can improve resident and staff outcomes and inform policy relevant to AL.

**Interdisciplinary Nursing Quality Research Initiative (INQRI) – Year 3
Full Proposal Executive Summaries**

Application ID 127723
Applicant Organization Regents of the University of Minnesota

Project Title Multidisciplinary Organization and Outcomes for Chronic Heart Failure Patients in the VA

Funding Requested \$300000

Nursing Scholar
Joanne Disch, PhD, RN
University of Minnesota
5-140 WDH
308 Harvard St SE
Minneapolis, MN 55455
Phone: 612-625-1187
Fax: 612-624-0908
disch003@umn.edu

Non-Nursing Scholar
Douglas Wholey, PhD, MBA, BA
University of Minnesota
MMC 729
420 Delaware St SE
Minneapolis, MN 55455
Phone: 612-626-4682
Fax: 612-624-2196
whole001@umn.edu

Executive Summary

Multidisciplinary Organization and Outcomes for Chronic Heart Failure Patients in the VHA
Our research focuses on nurse effects on productivity and quality. We will test a theory of the effect nurse-physician co-leadership, the effective modeling by nurses and physicians of individual role behaviors and a strong shared inter-professional relationship, in chronic heart failure (CHF) care groups in Veterans Health Administration (VHA) medical centers. The outcomes will be waste in care processes, patient outcomes of receiving dietary and medication instructions at discharge, adult smoking cessation advice/counseling, and readmissions and provider outcomes of nurse burnout and CHF knowledge. We hypothesize that nurse-physician relational co-leadership facilitates the implementation and refinement of standardized CHF care processes so that waste is minimized and outcomes are maximized. The unit of analysis is patients and providers nested in VHA CHF care groups. The design is an observational, with patient outcomes being followed for a year after a survey of CHF care groups. There are approximately 25 to 50 patients per medical center per year. The maximum number of CHF care groups is 167, one for each VHA medical center. Qualitative research will be used to describe contextual differences in CHF care groups and refine the survey. The survey will measure CHF care group characteristics (e.g., nurse-physician relational co-leadership, standardized processes) and provider outcomes. Mixed models will be used to estimate the effect of care group characteristics on performance. Instrumental variables will be used for causal modeling. Simulation will be used to estimate the impact of nurses. The research team is a collaboration of personnel from the University of Minnesota's School of Nursing and School of Public Health, the Center for Chronic Disease Outcomes Research at the Minneapolis VHA, and the CHF Quality Enhancement Research Initiative (QUERI) based in the Palo Alto VHA.

**Interdisciplinary Nursing Quality Research Initiative (INQRI) – Year 3
Full Proposal Executive Summaries**

Application ID 123778
Applicant Organization University of North Carolina at Greensboro

Project Title The Effects of Nurse Presenteeism on Quality of Care and Patient Safety

Funding Requested \$264106

Nursing Scholar
Susan Letvak, PhD
University of North Carolina at Greensboro
PO Box 26170
207 Moore Nursing Building
Greensboro, NC 27402-6170
Phone: 336-256-1024
Fax: 336-334-3628
susan_letvak@uncg.edu

Non-Nursing Scholar
Christopher Ruhm, PhD
University of North Carolina at Greensboro
PO Box 26165
444 Bryan Building
Greensboro, NC 27402-6165
Phone: 336-334-5148
Fax: 336-334-4089
chrisruhm@uncg.edu

Executive Summary

Project Title: The Effects of Nurse Presenteeism on Quality of Care and Patient Safety CFP
Topic Area: Studies that examine how nurses' contributions to high quality care impact the overall efficiency of health care in the US. **Description:** The primary aim is to evaluate the influence of presenteeism (decreased productivity due to health problems) on hospital Registered Nurses' (RNs) quality of patient care. A secondary aim is to assess economic costs to the healthcare system associated with presenteeism. Musculoskeletal disorders, present in a majority of practicing nurses, result in activity limitations and decreased productivity in workers. The number of nurses with depression is not reported, however depressed workers make more errors and are accident prone due to issues with concentration and focus. This is the first study known to examine musculoskeletal pain and/or depression in hospital RNs and their association with productivity and quality of care. A productive nursing workforce is also important for controlling costs. **Methods:** The study will use a mixed methods (quantitative survey and qualitative focus groups) design of RNs in North Carolina. The NC Board of Nursing will provide randomly selected names and addresses. The survey instrument measures will include individual and workplace characteristics, health problems (degree of pain and/or depression), presenteeism (Work Productivity and Activity Impairment Questionnaire), quality of care, patient safety (number of medication errors and number of patient falls), and salary (hourly). Research questions will be answered by descriptive statistics and regression models. **Dissemination:** Findings will be translated by written and oral presentations at the management, practice and cost levels to reach a large number of stakeholders, including nurse and healthcare organization leaders (including JCACHO, ANA, AHA and health economics groups), direct line nurse managers, nurses, and consumers of healthcare.

**Interdisciplinary Nursing Quality Research Initiative (INQRI) – Year 3
Full Proposal Executive Summaries**

Application ID 124249
Applicant Organization Univ TX Hlth Sci Ctr at San Antonio

Project Title Small Troubles, Adaptive Responses [STAR]: Fostering a Quality Culture in Nursing

Funding Requested \$300000

Nursing Scholar

Kathleen Stevens, EdD, RN, FAAN
The Univ of Texas Hlth Sci Ctr at San Antonio
7703 Floyd Curl Drive
Mail Code 7949
San Antonio, TX 78229-3900
Phone: 210-567-3135
Fax: 210-567-5822
stevensk@uthscsa.edu

Non-Nursing Scholar

Robert Ferrer, MD, MPH
The Univ of Texas Hlth Sci Ctr at San Antonio
7703 Floyd Curl Drive
Mail Code 7794
San Antonio, TX 78229-3900
Phone: 210-358-3930
Fax: 210-567-4579
FerrerR@uthscsa.edu

Executive Summary

“Small Troubles, Adaptive Responses [STAR]: Fostering a Quality Culture in Nursing” The proposed study aims to improve nursing units’ quality and efficiency. The research question is whether a program designed to identify and address small problems encountered by nurses in patient care, occurring about once per hour per nurse and managed with workarounds in 95% of cases, can lead organizational learning that will drive large improvements in safety, quality, and efficiency. We hypothesize that by shifting the normative response from “first order solutions” (fixing immediate problems) to “second order solutions” (fixing the system failure), latent failures that precede major adverse events will be removed. Reducing workarounds will also cut wasted effort and improve morale. The intervention, adapted from theoretically-based programs proved effective in other settings, combines a methodology for enhancing the underlying performance improvement capability of nursing units with a toolbox of quality improvement strategies relevant for tackling the small problems encountered in practice. A trained Unit Facilitator will assess each unit’s current improvement processes and capacity to manage change, and will collaborate with the unit for 12 months to promote and sustain change, while taking on specific improvement projects. The research design is a mixed-methods, prospective case study of 12 nursing units at 2 hospitals. Quantitative and qualitative outcomes data gathered at 6 randomly assigned intervention units will be compared with outcomes at 6 control units. The analysis applies a logic model specifying the pathway from inputs to actions to intermediate outcomes such as new problem solving strategies to ultimate outcomes such as improved nursing quality benchmarks and reduced adverse events. Findings will be disseminated through multiple channels to reach different stakeholders. We will present our results at national meetings attended by nursing and hospital leaders; publish in scientific journals, nursing and quality improvement newsletters; contact key health journalists in national media; submit project outcomes to the AHRQ Health Care Innovations Exchange; contact professional organizations;

Interdisciplinary Nursing Quality Research Initiative (INQRI) – Year 3
Full Proposal Executive Summaries

and prepare a 1-pager for distribution to stakeholders such as hospital CEOs, CNOs, and quality improvement officers.

**Interdisciplinary Nursing Quality Research Initiative (INQRI) – Year 3
Full Proposal Executive Summaries**

Application ID 124636
Applicant Organization Washington State University

Project Title Empowering Home Care Nurses to Efficiently Resolve Medication Discrepancies

Funding Requested \$298843

Nursing Scholar
Cynthia Corbett, PhD, MN, BA
Washington State University
P.O. Box 1495
SCLS #137
Spokane, WA 99202-1495
Phone: 509-358-7943
Fax: 509-358-7900
corbett@wsu.edu

Non-Nursing Scholar
Stephen Setter, PharmD, PharmB, DVM, BS
Washington State University
Health Science Building
P.O. Box 1495
Spokane, WA 99202-1495
Phone: 509-489-9283
Fax: 509-458-7459
ssetter@smhca.org

Executive Summary

Empowering Home Care Nurses to Efficiently Resolve Medication Discrepancies Nearly three million patients are transitioned annually from hospital to home care services, with documented risk for adverse effects due to transition-related medication discrepancies. To contribute to a better understanding of the potential for home care nurses to lead in the identification and resolution of medication discrepancies during transitions between hospital and home care providers, we propose a clinical trial that investigates a new nurse-led, informatics-based intervention. We hypothesize that with this improvement in their environment, home care nurses already on staff can enhance patients' outcomes, reduce healthcare costs, and eliminate the need for duplicative services by external consultants or specialty providers. Our work will extend related studies on medication discrepancy resolution in acute care settings (e.g., Costa et al.'s recently funded RWJ study) to the home environment. Kozma's Economic, Clinical, and Humanistic Outcome Model frames the proposed clinical trial. The intervention includes a) software, newly designed by our team, to merge electronic hospital discharge and home care medication data and alert home care nurses to discrepancies, b) the Medication Discrepancy Tool© to guide home care nurses toward medication reconciliation resolution, and c) a focused and efficient nurse-pharmacist collaboration to facilitate resolution of medication problems. Measurable objectives will be analyzed for statistical significance including: 1) higher rates of medication discrepancy detection; 2) greater medication discrepancy resolution; 3) fewer unplanned, post-hospitalization visits to physicians; 4) fewer re-hospitalizations; and 5) lower post-hospital health care costs. Data analytic strategies will include analysis of variance, multi-factor analysis of co-variance, and linear regression analysis.