

PHD DISSERTATION ABSTRACTS

PAMELA KAELIN MURPHY. (2009) *Postpartum Depression and Vitamin D.*

Teresa Kelechi, RN, PhD, Chairman, Advisory Committee

Determining biological markers such as 25-hydroxyvitamin D (25[OH]D), a measurement of vitamin D, that could predispose women to postpartum depression is essential for the prevention and early identification of this mood disorder, and mounting evidence exists correlating other mood disorders with serum 25(OH)D. Therefore, the main objective of this dissertation is to explore whether a correlation exists between postpartum depression and serum 25(OH)D. Three manuscripts are included: the first, an integrative review of the research literature comparing mood disorders and vitamin D status in women; the second, a concept analysis using the Walker and Avant (2005) method to identify a conceptual definition of postpartum depression; and the third, an original research report on the results of the exploratory study conducted to determine whether a correlation exists between postpartum depression and vitamin D status.

The integrative review reveals four of six identified studies (each examining a different mood disorder) show a significant association between mood disorders and low vitamin D levels. The concept analysis reveals the following conceptual definition of postpartum depression; postpartum depression can be diagnosed if a woman experiences anxiety or panic attacks, unstable emotions, weight loss or gain, insomnia or hypersomnia, fatigue or loss of energy, feelings of worthlessness or inappropriate guilt, difficulty concentrating, or recurrent thoughts of death with or without plans for suicide up to one year postpartum (number and duration of symptoms remains unclear). The exploratory study finds weak, non-significant, negative correlations between elevated EPDS scores and chronic exposure to decreased levels of serum 25(OH)D; and specific EPDS statements, evaluating for depressed mood and alterations in sleep patterns, and decreased levels of serum 25(OH)D. In conclusion, this exploratory study demonstrates that vitamin D may be a weak force in the incidence of postpartum depression, particularly influencing mood and sleep patterns. The results of this study show a weak correlation between vitamin D and postpartum depression when using the EPDS, warranting future rigorous research in this area using larger sample sizes comparing vitamin D to confirmatory methods of diagnosing postpartum depression while controlling for confounding variables.

SHARON M. BOND. (2009) *Prevention of Cervical Cancer: Challenges to Implementing HPV Vaccine Strategies among Medically Underserved Populations*

Teresa Kelechi, RN, PhD, Chairman, Advisory Committee

Cervical cancer is a major health problem and the second leading cause of cancer deaths among women worldwide. The purposes of this dissertation are threefold; to examine cervical cancer screening methods used in developing countries, evaluate prevailing attitudes toward new human papillomavirus (HPV) vaccines, and share results from a pretest of two instruments designed to measure knowledge, attitudes and beliefs about cervical cancer, HPV infection and the new vaccines among medically underserved populations.

In manuscript I, direct visual inspection (DVI) is examined as a method used to screen for cervical cancer in developing countries where population-based Papanicolaou (Pap) screening is unaffordable and incidence and death rates from cervical cancer are exceedingly high. In this manuscript, 22 studies of DVI, published between 2002 and 2006, are compared using authors' estimates of sensitivity, specificity and efficacy. International efforts to standardize DVI have resulted in significant improvements in its practice, generating comparisons to Pap testing in the United States. However, wide variations in sensitivity and specificity cause concern and expansion of DVI in low resource settings may be justified only if global health leaders cannot reduce political, financial and cultural barriers impeding introduction and acceptance of HPV vaccines.

In manuscript II, prevailing attitudes about HPV vaccine acceptability, stemming from its potential to theoretically eradicate cervical cancer on a global scale, are explored. However, research currently demonstrates that life-saving, anti-cancer vaccines are not inherently acceptable to some segments of the population and that beliefs among those most at risk for cervical cancer have not been adequately explored. Several studies reviewed in manuscript II lack findings regarding barriers and facilitators to vaccine use among medically underserved, diverse populations, thereby uncovering a significant gap in existing literature.

In manuscript III, the Preventive Health Model was used as a framework, to develop and pretest two instruments designed to measure knowledge, attitudes and beliefs about cervical cancer, HPV infection and the new vaccines among medically underserved African American, Hispanic and White populations. Using cognitive interviewing, results show that changes in language and format may reduce response errors, improve comprehension and quality of data.

SARAH ANN JOHNSON. (2008) *Healing in Silence: Black Nurses in Charleston, South Carolina, 1896-1948*

Susan Benedict, DSN, CRNA, Chairman, Advisory Committee

This dissertation examines the experiences and the roles of black nurses in Charleston, South Carolina, from 1896-1948 against the backdrop of Post-Reconstruction America and leading up to the Civil Rights Movement. This

study further examines the early transition of healthcare in Charleston from the domain of religious and benevolent organizations to intersection with mainstream healthcare in the United States. The study questions examined are: 1) What was the origin and experience of black nurses in Charleston, South Carolina? 2) How did the experience of black nurses of the era compare with their antebellum and post-bellum nurse predecessors at large? 3) What impact did the cultural and political climate in the South have on the transformation of nursing practice of black nurses? 4) What impact did black nurses have on healthcare delivery in Charleston from 1896 to 1948? and 5) What influence did early black nurses have on the evolution of and the integration of professional nursing? Primary and secondary sources from the United States, Great Britain, Canada and the West Indies were analyzed using a social history framework. The education and practice of black nurses in Charleston was developed and sustained under the umbrella of religions and philanthropic organizations. Though their Fourteenth Amendment political rights and their voices were subdued, black nurses utilized nursing work as a conduit through which black women forged a message of inclusion in professional nursing and by which they were introduced to limited benefits of citizenship. Black nurses in early Charleston articulated their citizenship and the need for social justice in healthcare through nursing work.

SUSAN DUNREATH NEWMAN. (2008) *Evidence-based Advocacy: Using Photovoice to Identify Barriers and Facilitators to Community Participation of Individuals with Spinal Cord Injury*

Carolyn H. Jenkins, DrPH, RN, FAAN DSN, Chairman, Advisory Committee

Disability scholars have called for disability research to follow critically oriented or emancipatory research paradigms (Oliver, 1992). Individuals with disabilities have expressed a need for inclusive, action-based research methodologies in which people with disabilities function as partners and consultants, not as research subjects (Kitchin, 2000). Community-based participatory research (CBPR) processes promote shared ownership of research projects between researchers and participants, provide for community-based analysis of social problems, and support interventions that involve community action (Kemmis & McTaggart, 2005). The study reported here used a qualitative design, with a CBPR approach through Photovoice methods to examine environmental barriers and facilitators to community participation of 10 participants who have a spinal cord injury (SCI).

Photovoice, entails providing study participants with cameras, allowing them to record, discuss, and communicate to others, the realities of the participants' lives as seen through their eyes (Wang & Burris, 1997). Photovoice is gaining

popularity as a participatory research method, yet there is no published critical review of the method using specific criteria for evaluation of participatory methods. The primary purpose of the first manuscript is to present a model for the critical appraisal of the use of Photovoice as a participatory research method using Green and colleagues' (1995, 2003) Guidelines for Participatory Research in Health Promotion. The second manuscript provides a report on a project that implemented Photovoice to identify barriers and supports to community participation of individuals with SCI in partnership with the Disability Resource Center, an independent living center in North Charleston, South Carolina. The taxonomy of environmental factors in the World Health Organization's (2001) International Classification of Functioning, Disability and Health provided the framework for organizing the participant's photographs and their discussion of the photos. Results of the analysis indicated the primary occurrence of barriers and facilitators in the physical environment, with the developed outdoor environment being most problematic. In the third manuscript, the participants provide an assessment of the utility of Photovoice as a tool for disability advocacy. Their photographs and stories support the development of locally relevant, evidence-based advocacy efforts to address issues of access to services and resources in the Charleston community.

CHERYL ANN CARLSON. (2007) *Inflammatory Mediators in Premature Infants with Surfactant Deficiency and Dysfunction.*

Gail Stuart, PhD, APRN, Chairman, Advisory Committee

The inflammatory process is the response of the body to defend against pathogens and toxic substances, and repair damaged tissue. In the lungs, damage to the pulmonary capillary endothelium and epithelium results in capillary leak, exudation of plasma and plasma proteins into the alveolar space and the release of pro-inflammatory mediators. The acute inflammatory response associated with secondary respiratory failure can lead to severe lung injury resulting in impaired gas exchange, and possibly death. Surfactant administration in premature infants who develop a secondary respiratory decompensation may decrease the inflammatory cascade and protect the lungs from fibrosis and edema. A prospective, pilot study was done to study the effect of surfactant on cytokine response in tracheal aspirates. A secondary data analysis was performed looking at respiratory severity scores and the inflammatory mediators. Entry criteria included infants who were > 7 days of age, qualifying if they had a secondary respiratory decompensation, after recovery from primary RDS. Infants meeting all entry criteria received either Curosurf or Survanta within four hours of the qualifying decompensation and again 12 hours later. Oxygen, ventilatory parameters, blood gas results and tracheal aspirate samples were collected prior to, and 12 and 24 hours after dosing. Twenty neonates qualified for secondary surfactant administration and

10 had tracheal aspirates collected at the 3 time points. There were trends toward decreasing pro-inflammatory cytokines after surfactant administration. Surfactant dosing seemed to disrupt the correlation of pro-inflammatory cytokines, suggesting that inflammatory cytokines are affected differently. The Respiratory Severity Score (RSS) and Modified Ventilatory Index (MVI) have been studied in this group of infants. The ability to use clinical data in an objective scoring system that correlates with the inflammatory process in the lungs would be advantageous in deciding when and which treatment options were most appropriate. Based on this study, MVI scores seemed to be a better indicator of changes in inflammatory mediators, and maybe a better predictor of on-going inflammation and risk of CLD. Further randomized controlled trials are needed to confirm these preliminary results.

LAURIE KAY ZONE-SMITH. (2007) *Psychometric Testing of a Nursing Intensity Workload Measurement Instrument*

Gail Stuart, PhD, APRN, Chairman, Advisory Committee

Based on a desire to measure nursing workload for the purpose of better allocation of staffing and to apportion the cost of nursing care in the hospital bill, a study was designed to demonstrate the psychometric properties of a newly developed inpatient nursing intensity workload measurement instrument deployed in an academic tertiary care hospital setting across multiple specialty units. A review of nursing intensity instruments was conducted to examine approaches and adequacy of validity and reliability testing finding no fatal flaws and multi-method use of psychometric tests for seven tools. Three pilot studies were conducted over a six year period examining the new Medical University of South Carolina (MUSC) Nursing Intensity Database© instrument's validity and reliability, showing promising psychometrics and sensitivity to changes in nursing workload where staffing ratios do not. The research study used a retrospective longitudinal design to examine the estimates of direct hours of nursing care resources expended to provide care for individual patients as reported by the assigned registered nurse. Data were collected in 32 hospital nursing units over eight months (January 2006 - August 2006) producing 160,072 patient shift estimates. Estimates were averaged for monthly estimates and yielded a sample of 256 observations to test five study hypotheses. Contrasted groups construct validity, predictive validity, internal consistency and inter-rater reliability were established for a majority of 32 units (60%). The tool is psychometrically sound; it is sensitive to differences among units; and exposes the variability of nursing resources expended for individual patients across different nursing care units. A novel approach to inter-rater reliability consistently demonstrated agreement between nurse's estimates for patients with the same selected All Payer Related - Diagnosis Related Groups (APR-DRGs) and for increasing higher levels of severity of illness. These findings suggest the tool can be used in an academic tertiary care hospital setting to quantify nursing resources using direct care intensity hours and

optimize staffing to meet patient care demands for nursing care. This tool may also provide an independent variable that can be used in a revised DRG cost based system to quantify the nurse's contribution to care in a national nursing billing model.

MARILYN SCHAFFNER. (2006) *Antecedents and Consequences of Work-Related Nurse Fatigue: A Preliminary Evidence-Based Model*

Gail Barbosa, RN, ScD, Chairman, Advisory Committee

Despite the fact that long hours and fatigue among nurses have been identified as serious threats to patient safety, few studies have addressed this important subject. This study investigates the antecedents and consequences of perceived fatigue in nurses with a focus on the work environment and develops a statistical model for examining the contribution of variables to work-related perceived nurse fatigue. The model can be used in future studies that focus on strategies to decrease nurse fatigue and improve patient outcomes. A framework was derived from Piper's (Piper, Lindsey & Dodd, 1987) Integrated Fatigue Model (IFM). The study design was cross-sectional and multivariate and included Registered Nurses (n = 809) working in a southeastern United States academic medical center. A web-based administered Nurse Fatigue Questionnaire (NFQ) that includes the standardized Piper Fatigue Scale (PFS) and the standardized Occupational Fatigue Exhaustion/Recovery Scale (OFER15) was used. Structural equation modeling was used to determine the antecedents and consequences of fatigue in nurses working in a hospital setting. The Schaffner Fatigue Model confirms the hypothesized antecedents and consequences of perceived nurse fatigue. Antecedents have a direct effect ($\beta = .42$, $p = .001$) on perceived nurse fatigue and perceived fatigue has a direct effect on both individual ($\beta = .46$, $p = .001$) and interpersonal ($\beta = .31$) consequences of fatigue. The most compelling finding is the significant negative effect of perceived nurse fatigue on quality of interactions with peers, physicians and patients that ultimately impacts clinical errors and the ability to respond quickly to a patient who is becoming acutely ill. Findings advance knowledge about antecedents and consequences of work related nurse fatigue and provide an evidence-based practice and research model that can be tested in future studies to reduce nurse fatigue and improve patient outcomes.

GAYENELL SMITH MAGWOOD. (2006) *Evaluation of Two Health Related Quality of Life Instruments for Use with Older African Americans with Diabetes Mellitus.*

Carolyn Jenkins, DrPH, FAAN, Chairman of the Advisory Committee

The purpose of this methodological qualitative study was to examine sources of problems in comprehension, response categories and within-language cultural variations that may influence validity and reliability of two existing diabetes-

specific Health Related Quality of Life (HRQOL) instruments, The Audit of Diabetes Dependent Quality of Life (ADDQoL) survey and the Diabetes Quality of Life Brief Clinical Inventory (DQOL-B). By adapting three theoretical models: PRECEDE-PROCEED, Andersen's Behavioral Model of Utilization, and Wagner's Chronic Care Model HRQOL is conceptualized as it is linked to interventions, productive interactions, and relevant outcomes. Using cognitive interviewing (CI) methods, semi-structured interviews, consisting of survey questionnaires and verbal probes, were conducted with a purposive sample of 15 older African American adults who were diagnosed with type 2 diabetes. Each respondent was interviewed twice for a total of 30 interviews. Data underwent content analysis. The sample had a mean age of 72 years. Sixty percent were high school graduates. Most had multiple comorbidities (80%) and rated their health as good (67%). Health literacy results indicated marginal levels of health literacy. Interview data showed most observed problems with the HRQOL questionnaires were related to comprehension difficulties. This study provided evidence that unfamiliar language and meaning of specific words, uncertainty as to what was being asked with some questions or instructions, and confusing or not applicable response options led to numerous response errors on both instruments. Another important theme identified was this cohort did not distinguish between certain functional limitations and/or level of satisfaction being solely associated with their chronic illness or the aging process. This study has implications for further research on the appropriateness of established and new instruments. Cognitive interviewing is resource intensive, requiring time, specialized skill, and added cost to a project. Despite these limitations, the data from this study, though small, has provided a needed systematic approach to investigating respondents' cognitive processing of an important construct closely associated with chronic illness. Furthermore, this study has used a systematic framework to identify problems and analyze the cognitive interview data.

WINNIE HENNESSY. (2006) *Exploring Differences in Resources Intensity in Dying Intensive Care Patients*

Gail Stuart, PhD, APRN, Chairman, Advisory Committee

Purpose: To investigate if there are differences in administrative (cost, cost per day, length of stay) and clinical outcomes (ventilator, dialysis, and artificial feeding days) between black and white patients who die in the intensive care unit (ICU) after adjusting for selected patient characteristics Instrument: Secondary analysis of routinely collected hospital administrative data. A quality assurance model (structure-process-outcome) provided theoretical guidance. Sample: All black and white adults (>17 years of age) who died in an ICU during a five year period (n=1446). Final sample for administrative outcomes analysis included all those patients with an ICU length of stay (LOS) of ≥ 3 days (n = 823). Final sample for clinical outcomes included all those patients with an ICU length of stay (LOS) of ≥ 3 days and had life support

initiated (ventilator n = 723, dialysis n= 301, artificial feeding* n = 351 (*cases after 7/19/2001). Analysis: SPSS version 12.0. Chi-square and t test were used to describe the unadjusted sample (n=1446) and establish the final sample (n = 823). Univariate analysis of variance (ANOVA) and regression were used to establish significant bivariable associations for the multivariable analysis. Multiple regression was used for hypothesis testing. Results: Race was found to be statistically significant predictor (p = .000) accounting for about 2% of the variation in the adjusted model for total cost (R = .866, R2 = .785) and cost per day (R = .479, R2 = .230) however race was not found to be a significant predictor (p = .076) accounting for less than 1% of the variance in length of stay (R = .174, R2 = .030). There were no proportional differences in initiation of ventilator (p = .540) or dialysis (p = .312) therapies however there are proportional differences in the initiation of artificial feeding (p = .007). Race was not found to be statistically significant predictor (p = .573) accounting for less than 1% of the variation in the adjusted model for ventilator days (R = .813, R2 = .660) and not a significant predictor (p = .644) accounting for less than 1% of the variation in the adjusted model for dialysis days (R = .604, R2 = .364) however race was found to be a significant predictor (p = .030) in artificial feeding days accounting for 3% of the variance in the adjusted model (R = .797, R2 = .635) Conclusions: Race accounts for approximately 2-3% of the variation in cost, cost per day, length of stay and artificial feeding. Ventilator and dialysis therapies are initiated equally however differences in artificial feeding may suggest a disparate practice. Additional research is needed to evaluate the interaction of insurance, severity, ICU area and length of stay.

VALERIA SHIPP. (2006) *Effectiveness of Accumulated Counted Steps in Meeting Recommended Physical Activity Guidelines*

Carolyn Jenkins, DrPH, FAAN, Chairman of the Advisory Committee

The importance of establishing objective, quantifying methods for physical activity (PA) behavior that results in healthy outcomes is essential. Although moderate intensity walking at least 30 minutes a day, 5 or more times weekly is the national PA standard, African American (AA) men are identified as a vulnerable group that self-reports limited PA and have a high incidence of overweight, obesity and hypertension. Pedometers can assist middle age AA men to utilize goal setting and self-monitoring of daily step counts to adapt increased walking into their daily activities. Purpose: To investigate if pedometer use would be effective in increasing a common physical activity, walking, in a group of AA men ages 30-60 years living in the Charlotte, NC area. Specific Aim: To compare the effects of two PA intervention strategies, pedometer monitored goal setting and daily step accumulations and the PA standard, accumulation of at least 30 minutes of brisk walking, in AA men ages 30-60 years. Research Design and Methods: A 12 week, two-group, quasi-experimental, pretest-posttest design was used. A convenience sample of 80 AA men ages 30-60 years were randomly assigned to the Step Goal and Daily

Walking Groups. Pre and post step counts, blood pressures, weights and BMI differences were compared in both groups using t-test. Results: Findings showed a mean average step count increase from 5,835 at Baseline to 7,614 (30.5 % increase) for the Step Goal Group and an increase from 5,992 to 7,351 (22.7% increase) for the Daily Walking Group. Blood pressure, weight and BMI results suggested no significant difference between the groups. Conclusion: The step counts increased for both groups. However, step count increases suggested no significant effect on blood pressure, weight and BMI.

CINDY ALLEN, PHD (2005) *Prenatal Care Utilization as a Predictor of Failure to Thrive*

Tara Hulsey, PhD, RN Chairman of Advisory Committee

This case-control study used an academic health sciences center sample to examine differences in prenatal care utilization (defined by the number of prenatal care visits and gestational age at entry into prenatal care) between failure to thrive infants and healthy infants; and test prenatal care utilization as a predictor of failure to thrive. This study described maternal bonding characteristics (prenatal care utilization, infant length of hospital stay, feeding method, frequency of call/visits, and discharge teaching) of hospitalized failure to thrive infants. Using the Medical University of South Carolina Perinatal Information System, Keane System, and Practice Partner databases, a study sample (N=222) was obtained from mothers who received prenatal care service, delivered their child at MUSC, and obtained pediatric health services through the university network during 2001-2004. The conceptual model used to guide this study was Barnard and Eyres' (1979) Child Health Assessment Model; an ecological model based on the assumption that the mother, infant and environment are all in interaction. Failure to thrive often results from dysfunctional maternal-infant interactions triggered by interference. The maternal health seeking behavior of prenatal care use was utilized as a proxy for maternal-fetal/infant attachment. Maternal variables examined in this study were: adequacy of prenatal care utilization, education, age, parity, and pregnancy interval. The environmental variable was marital status and child variables were intrauterine growth and gender. Cases and controls were matched 1 to 1 in terms of age, race, and insurance status. Preliminary data analyses found that prenatal care utilization, based on the number of prenatal care visits and gestational age at entry into care, and gender were independently associated with failure to thrive. There were no significant differences in adequate/less than adequate prenatal care utilization, maternal age, education, parity, pregnancy interval, and intrauterine growth between cases and controls. The odds for females developing failure to thrive were 1.834 times higher than for males ($p = 0.027$); prenatal care utilization was not a predictor of failure to thrive when controlling for confounding variables ($p = 0.502$). Using the Child Health Assessment Model only 2.5% of the variance of

the predictive independent variables were explained.

BEVERLY BRADLEY. (2005) *Life Stressors and Family Resources as Predictors of Psychosocial Adaptation in School-age Children and Adolescents of Mothers with Breast Cancer*

Tara Hulseay, PhD, RN, Chariman of Advisory Committee

The purpose of this correlational study was to determine the association of life stressors and family resources with the psychosocial adaptation of the child whose mother has breast cancer. A convenience sample of 40 children, ranging in age from 8 to 19 years, with a mother diagnosed with breast cancer and treated at a cancer center in a middle-sized city in the southeastern part of the United States was recruited for the study. Initial contact was made with the mother during a clinic or home visit to collect information from the mother and child. The mothers completed the Life Stressors and Social Resources Inventory-Adult Form (LISRES-A) (Moos, Fenn, Billings, & Moos, 1988), Brief Symptom Inventory (BSI), (Derogatis, 1983), rated their child's behavior using the Children's Behavior Checklist (CBCL) (Achenbach, 1991), and provided demographic data. The children completed the Multidimensional Anxiety Scale for Children (MASC), (March, Parker, Sullivan, Stallings, & Conners, 1997), and Children's Depression Inventory (CDI), (Kovacs, 1980). Data from these instruments were collected, and descriptive statistics, including means and standard deviations, were computed. Pearson product moment correlations were performed to test the relationships between the independent variables (family stressors and resources as recorded on LISRES-A, as well as selected demographic, maternal illness, and maternal distress variables) and the dependent variables of child psychosocial adjustment (CBCL, CDI, and MASC). Group means for categorical variables, for which correlation coefficients were not appropriate, were examined to determine how they influenced child psychosocial adjustment. Based on the bivariate correlation coefficients, the t tests that were performed for the categorical variables, and the hypotheses of the investigation, four separate hierarchical multiple regression equations were constructed for each of the dependent variables, to determine which independent variables predicted child psychosocial adjustment. Results indicated that for mothers' ratings of child adjustment (CBCL Internalizing and CBCL Externalizing scales), women who reported less support from their spouse/partner reported greater symptoms of child internalizing behavior. Women who reported their child to be a greater source of stress reported greater symptoms of child externalizing behavior. Children, whose mothers reported more friends as a family resource, self-reported less internalizing behavior (CDI).

PHYLLIS BONHAM. (2005) *Non-invasive Assessment of Lower Extremity Arterial Disease: Determining the Validity of Using A Hand-held, Portable Doppler for Ankle Brachial Index (ABI) and Toe Brachial Index (TBI)*

Measurements

Tara Hulsey, PhD, RN, Chariman of Advisory Committee

Lower extremity arterial disease (LEAD) affects approximately 30% of individuals 66 years of age and older with many complications and 50% are undiagnosed. Nurses typically use unreliable methods (pulse palpation and history) for LEAD assessment despite national guidelines that have recommended ankle brachial index (ABI) and toe brachial index (TBI) to screen for LEAD. The specific aim of this comparative, within-subjects design study was to determine the validity of ABI/TBI obtained by an experienced nurse (RN/PI) with a pocket-portable Doppler compared to findings by a vascular technologist (RVT). The a priori hypotheses were that the differences between the RN/PI and RVT ABI and TBI would be no greater than 15%. ABI and TBI were performed on 30 participants, who were referred to a vascular laboratory for arterial studies. Mean age was 63.8 years. Gender was approximately equivalent and 53.3% (n = 16) were Caucasians and 46.7% (n = 14) were African Americans. Data were analyzed according to the Bland and Altman method and limits of agreement were calculated. Initial data analysis of ABI revealed an unexpected linear trend where the RN/PI value overestimated the lower values and underestimated the higher values. Simple linear regression was calculated, which explained 95% of the variation in the RVT right ABI and 94% in the RVT left ABI. The regression equation was used to predict the RVT value based on its relationship with the RN/PI value. When the limits of agreement were recalculated using the unbiased measurements, the percent difference of the RN/PI and RVT ABI were within 15% agreement, which is consistent with other investigators that have reported that 15-20% interobserver difference in ABI is acceptable. However, the differences in RN/PI and RVT TBI were quite high (35-63%) and indicate that Doppler cannot be used interchangeably with photoplethysmography or relied on to diagnose LEAD due to the difficulties in locating and hearing digital pressures, especially if toes are cold. Therefore, in this small pilot, there is evidence that the pocket-portable Doppler can be adopted as a routine instrument for ABI assessment by nurses and other health providers but is not reliable for TBI.

CHARLES HOSSLER. (2005)

Differences in the Quality of Diabetes Care by Payer Status

Carolyn Jenkins, DrPH, MSN, RN, BC, RD, CDE, FAAN, Chair of Advisory Committee

Purpose: To examine changes in the quality of diabetes care (QDMC) that is delivered in four REACH affiliated healthcare sites in Charleston and Georgetown Counties of South Carolina. Instrument: Secondary data analysis of chart audit information collected by a REACH 2010 project. Data were

collected using a REACH designed tool modeled after MEDQUEST data collection tools. Sample: Chart audit data from 899 randomly selected subjects who received diabetes (DM) care at the sites randomly selected for inclusion in the REACH study. Chart audit information collected included processes of care measures including A1C, lipid, and kidney testing and frequencies, foot examinations, and blood pressure measurements at the time of visits as well as intermediate outcomes for those with DM. The intermediate outcome measures included blood pressure, A1C, lipid, and kidney test results. Results: Multivariate logistic regression was used to predict the likelihood of a person with DM receiving a process of care measure and/or achieving desired intermediate outcomes related to DM control. Predictions for receiving QDMC are represented by an OR. The only identified significant differences in QDMC were: (1) Medicare enrollees and Medicaid recipients experienced less QDMC than those with commercial insurance for LDL-C control and, (2) Medicaid recipients received less QDMC related to annual foot exams than those with no insurance. Conclusions: Payer status had little effect on QDMC among this population. Other influences not accounted for in this study have a great impact on QDMC at the four REACH affiliated healthcare site.

LYNNE S. NEMETH. (2005)

Implementing Change In Primary Care Practice

Gail W. Stuart, PhD, APRN, FAAN, Chairman of Advisory Committee

The purpose of this research was to explore the process of change to implement clinical guidelines in primary care practices using electronic medical records. Eight primary care practices engaged within the PPRNet-TRIP II clinical trial comprised the setting for this research. Purposive sampling was used to elicit practice staff and clinicians regarding how change in practice was accomplished. Using multiple methods, an explanatory model guiding the process of change emerged. Through participant observation, interviews and a grounded theory approach to data analysis, the conceptual framework "How to Lead Improvement for PPRNet-TRIP" was modeled. Organizational cultural characteristics were identified using the Practice Staff Questionnaire (PSQ). The grounded theory "How to Lead Improvement for PPRNet-TRIP" provides a framework for implementing evidence-based research into practice. The critical elements of this process include leaders setting a vision with clear goals for staff to embrace; involve the team, a mechanism to engage all staff in a way that buy-in to the leader's goals and vision for the practice can be achieved; enhance communication systems increases the team's ability to reinforce goals for patient care; develop the team with staff development as a crucial component of practice improvement; take small steps, encouraging practices' tests of small changes in practice; assimilate the EMR to maximize clinical effectiveness, enhancing practices' use of the electronic tool they have invested in for patient care improvement, and feedback within a culture of improvement, leading to an iterative cycle of goal setting by the leader. The

conceptual framework visualizes how changes in practice settings can be implemented. Organizational culture measures from the PSQ provided metrics that added value to the emergent case studies of the practices included within this research. By triangulating the data sources using quantitative description within a qualitative framework, contextual factors were enhanced. Health care professionals are in a prime position to shape the future health care system based upon sound clinical evidence and the science of quality improvement. With practices adapted to teamwork, interdisciplinary learning and use of performance data to drive improvement leaders can shape more successful organizations.

JENNIFER LYNN ELKINS SHEARER. (2004)

The Process of Protection by Parents of Young Children at Risk or Exposed to Lead in the Environment.

Carolyn Jenkins, DrPH, MSN and Marilyn King, DNSc, RN, co-chairs, Advisory Committee

The purpose of the study was to explore the nature of protection by parents of young children at risk or exposed to lead in their environment. Grounded theory methodology guided the research design. Participants were obtained through purposive sampling of families known from previous research and by referral from a pediatric clinic where lead screening was done. Further enrollment was done by snowball sampling. Theoretical sampling provided exploration of protection along themes guided by the developing theory. Data were collected from parents with children from 0-5 years old who were exposed or had been exposed and who may or may not have been poisoned. Data were observations, medical records information, and semi-structured interviews. Twenty-two interviews from eighteen participants were analyzed using dimensional analysis methods to configure an explanatory matrix about parental protection. Data were analyzed using software for nonnumerical, unstructured data indexing, searching, and theorizing (NUD*IST, N6). Dimensions of context included uncertain risk and vulnerability of children. Conditions that influenced the process of protection were unequivocal commitment to responsibility, the likelihood of assurance, and the resources of parents and timing of awareness. The processes of protection were the control of uncertain risk by moving and removing, and the control of vulnerability by vigilant presence and general interventions embedded with protection. The consequences of protection were assurance of uncertainty by elimination, and moderation of vulnerability by avoidance. Protection at the intersection of risk and vulnerability required control from multiple environmental levels. The overarching explanation of protection was controllability. The significance of this study was the development of a substantive theory of parental protection from lead exposure and poisoning and contribution to an ecological perspective of protection.

