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# Oncology Nursing Society's Connections: Advancing Care Through Science Podium Abstracts

Each abstract has been indexed according to first author on page E590.

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**1402244**

## A RANDOMIZED CONTROLLED TRIAL EVALUATING THE EFFECTS OF A PATIENT-PARTICIPATED NUTRITIONAL EDUCATION FOR PATIENTS WITH GASTRECTOMY.

Hyunsun Kim, MSN, RN, Seoul National University Hospital, Seoul, Republic of Korea; Eunyoung E. Suh, PhD, FNP, RN, Seoul National University, Seoul, Republic of Korea and Seoul National University Research Institute of Nursing Science, Seoul, Republic of Korea

**Objective:** Upon the completion of this presentation, the participants will be able to understand the effects of the patient-participated nutritional education for patients with gastrectomy.

Patients with gastrectomy often face inevitable weight loss and hardship to improve their nutritional status due to partial or total loss of the stomach. Increasing oral intake and adherence to the diet guidelines are the keys to preventing morbidities caused by malnutrition. No known research has investigated the efficacy of an educational program in which patients get participated in diet planning although the concept of patient participation is known to be an effective strategy for patient motivation. The purpose of the study was to evaluate the effects of patient-participated nutritional education for patients with gastrectomy on knowledge, oral intake, adherence to diet guidelines, and patient satisfaction. The concept of participatory control and the adult learning theory were applied. This study was a randomized controlled trial. The patients underwent gastrectomy were recruited from a university-affiliated cancer center in Seoul, Korea. Total 56 patients were randomly assigned into the experimental (patient-participated nutritional education) or control group (usual nutritional education). The treatment intervention was composed of tailored nutritional information, patient-participated diet planning (choosing types of food and cooking styles), and action planning for practicing diet guidelines. Intervention was administered through two face to face nutritional educations and two telephone-counseling during the 12 weeks of period. Post tests were done at the points of 2 and 12 weeks after hospital discharge. Oral intake was calculated using the CAN (Computer Aided Nutritional analysis) program with 3 day-recall diet diary, and other variables were measured by self-reported instruments. A total of 48 patients (26 in experimental and 22 in control) completed the study. Sociodemographic

and disease characteristics and pre-treatment diet history did not differ among two groups. The experimental group demonstrated increased knowledge ( $F=26.088$ ,  $p<0.001$ ), oral intake ( $F=10.296$ ,  $p=0.002$ ), adherence to diet guidelines ( $F=31.244$ ,  $p<0.001$ ), and patient satisfaction ( $t_1=22.026$ ,  $t_2=22.151$ ,  $p<0.001$ ) compared to those in the control group. Increasing participatory control of the patients with gastrectomy by way of providing a patient-participated nutritional education is proven to be effective in increasing their oral intake and other nursing-sensitive patient outcomes.

**1403238**

## THE EFFICACY OF AN AUTOBIOGRAPHICAL MEMORY INTERVENTION ON ADVANCE CARE PLANNING WITH PEOPLE WITH TERMINAL CANCER.

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**Underwriting/Funding Source:** American Cancer Society

**Objective:** To examine the initial effectiveness of a novel, autobiographical memory intervention to promote advance care planning with people over 55 who have a diagnosis of terminal cancer recently enrolled into hospice care.

To find a reasonable, effective method to facilitate higher completion rates for advance care planning. In 2012 in the US, an estimated 571,000 people will die of cancer and of those only 20-30% will have an advance directive, a part of advance care planning, despite education. Patient education has been the primary intervention for over 20 years. The purpose of this study is to test the efficacy of a novel intervention to facilitate completion of advance care planning. The research question is: 1. Can the intervention increase the likelihood of decision making and subsequent communication relative to specific aspects of advance care planning? Autobiographical memories are useful in helping cancer patients individualize care decisions. Recent research findings demonstrate a positive correlation with increased completion of advanced directives and improved provider-patient-family communication. Two-independent groups, quasi-experimental pilot recruited a convenience sample of 50 people with terminal cancer from a single, large hospice in Southwest US. The memory intervention focused on the specific memories of a single episodic event, the lesson learned from that experience,

and how these memories can help in the participant's present-day situation. Three instruments were used to evaluate the effectiveness of the memory intervention. Data were collected in REDCap database and analyzed in SPSS v20.0 with descriptive and inferential statistics. Participants in the intervention group had a statistically significant ( $p < .10$ ) higher average rank than the participants in the control group for six advance care planning variables. The results are preliminary support for use of a memory intervention to facilitate advance care planning. Advance care planning for people with cancer is vital to improving the quality of care at the end-of-life. A large randomized trial is needed to validate these findings.

#### 1404699

**EVIDENCE-BASED NURSING PRACTICE NEEDS IN AN AMBULATORY CANCER CARE SETTING.** Meghan Underhill, PhD, RN, AOCNS®, Dana-Farber Cancer Institute, Boston, MA; Kristin Roper, RN, MS, OCN®, Dana-Farber Cancer Institute, Boston, MA; Mary Lou Siefert, AOCN®, DNSc, Dana-Farber Cancer Institute, Boston, MA; Susanne Conley, RN, MSN, CPON®, AOCNS®, Dana-Farber Cancer Institute, Boston, MA; Jean Boucher, RN, PhD, Dana-Farber Cancer Institute, Boston, MA, and University of Massachusetts Worcester, Worcester, MA; Donna Berry, PhD, RN, AOCN®, FAAN, Dana-Farber Cancer Institute, Boston, MA

**Objective:** Describe an institutional assessment of evidence based nursing beliefs and implementation and recommend an action plan to address opportunities to develop awareness and education.

The purpose of evidence based practice (EBP in nursing) is to improve clinical care and patient outcomes by providing the best and most up to date care practices. Although evidence supports that the nurse values and understands the importance of EBP to improve practice, determining how to practically implement EBP is a challenge for nurse leadership and direct care nurses. Consequently, baseline data are required to establish nurses' beliefs and implementation practices regarding EBP in order to understand precisely where continuing education needs exist. The purpose of this project was to understand and describe nurse beliefs and perceived implementation of EBP. Advancing Research through Close Collaboration model. EBP-Beliefs (EBP-B) (score range 16-80) and Implementation (EBP-I) (score range 0-72) scales were distributed to all DFCI nurses through a cross-sectional online survey in the summer of 2011. Descriptive summary statistics, T-tests, one-way ANOVA, and correlations of the EBP-B & I surveys were completed to describe demographic data and compare and explore differences dependent on nursing role, EBP education, and experience. Ninety and 75 nurses from one institution completed the EBP-B and EBP-I, respectively. The mean score for EBP-B was 56.9 (SD=9.2) and for EBP-I 35.5 (SD=17.3) suggesting that nurses believed that EBP is valuable to patient care, but are neutral in feeling that they can implement EBP in their practice. Most respondents perceived that they infrequently or never implemented concepts of EBP. Exposure to EBP education was positively associated with beliefs and implementation ( $r=.5$ ;  $p < .01$ ) and EBP-I scores differed for those with or without formal EBP education ( $p < .01$ ; Confidence Interval (CI): 11.2-24.8). EBP-B differed based on highest level of education ( $p=.02$ ;  $F=4.3$ ). While no significant findings resulted based on nursing role or experience, only a small portion of the sample identified EBP resources. Even within a well-educated and experienced oncology nursing workforce EBP gaps persist. Understanding needs at the institutional level can help guide an action plan to improve EBP beliefs and implementation. These findings have led to a multi-phase response at our institution to address the gaps identified.

#### 1405241

##### **RICE, ROTI AND RIGOR: LESSONS LEARNED FROM CONDUCTING ETHNOGRAPHIC FIELDWORK IN A GOVERNMENT CANCER HOSPITAL IN SOUTH INDIA.**

Virginia LeBaron, ACNP-BC, FAANP, University of Utah, Salt Lake City, UT; Susan L. Beck, PhD, APRN, FAAN, University of Utah, Salt Lake City, UT

**Underwriting/Funding Source:** American Cancer Society; University of Utah Graduate School; Fulbright Grant

**Objective:** Participants will be able to describe at least 3 strategies to conduct successful international, nursing ethnographic research.

The global cancer burden is increasing, particularly in low and middle income countries, as is the need for quality, international, oncology nursing research. However, conducting international nursing research can be fraught with challenges. The purpose of this presentation is to describe my experience conducting ethnographic fieldwork in India, and to offer methodologic suggestions and practical strategies to others pursuing similar projects. Ethnography is a qualitative research method with its roots in anthropology, whose broad goal is to describe and understand culture. A key component of ethnography is fieldwork, which involves prolonged immersion within the culture being studied. Oncology nurse researchers may face significant obstacles in planning and implementing research in a global context, especially in a country with limited resources. The nurse researcher may discover techniques readily applicable in the West are impractical in the developing world, and creativity, flexibility, and perseverance are critical to successfully complete an international health research project. The study setting was a 300-bed government cancer hospital in urban South India. This critical ethnography explored the experience of moral distress (MD) in the sociocultural context of nurses caring for patients with advanced cancer. Over 9 months, I interviewed 34 oncology nurses, 16 health care providers, and 4 patient/family members, logged over 350 observational hours, and recorded 450 pages of field notes. Methodological issues included establishing trust and rapport with participants and hospital administration, language and translation barriers, logistical challenges in scheduling and conducting interviews, difficulties in transcription, personal safety concerns, and managing 'culture fatigue.' The presentation will address successful and unsuccessful approaches for addressing the issues encountered. Oncology nurses have a critical role in producing quality cancer-related research in an international context. Those who chose to conduct health research in resource constrained settings have a unique opportunity to influence global cancer control and public policy, the delivery of cancer care, and to mentor practicing oncology nurses. Oncology nurses with a passion for global health deserve to be as informed and prepared as possible before embarking on international research projects. Sharing experiences and strategies can help inspire confidence and motivation to undertake research endeavors in low and middle income countries.

#### 1407748

**INFLUENCES OF SELF-CARE IN THE CONTEXT OF CARE-GIVING FOR A SPOUSE WITH A BRAIN TUMOR: A THEORETICAL MODEL.** Norissa Honea, PhD, RN, AOCN®, Barrow Neurological Institute, Phoenix, AZ, and St. Joseph's Hospital and Medical Center, Phoenix, AZ

**Underwriting/Funding Source:** ONS/Genentech Doctoral Scholarship and partially funded by NCI Training Grant R25 CA 093831 (K. Mooney, PI)

**Objective:** Describe factors that influence caregivers in their performance of self-care within the context of caring for a spouse/partner with a brain tumor.

Challenges in caregiving for a spouse/partner with a primary brain tumor (PBT) involves dealing with neurological sequelae plus effects of oncological treatment. Meeting such challenges usually shifts a caregiver's self-care to a lower priority of concern leading to negative health consequences in the caregiver and potential risk to the care receiver. Providing care to someone with a brain tumor requires physical and emotional stamina as well as other resources. The spouse/partnered caregiver's self-care is necessary to maintain health, screen, prevent and/or protect from injury and illness allowing one to continue in their role as caregiver. This study's aim was to explore the psychosocial processes that shape the personal health behaviors of caregivers whose spouse/partner has a PBT. Self-care Theory. Using Constructivist Grounded Theory design and theoretical sampling, caregivers (n=19), care receivers (n=15), and healthcare providers (n=3) contributed data through medical records, questionnaires, interviews and/or focus group discussion. Data analysis using constant comparison allowed researcher and participants to coconstruct a theory of self-care within the PBT spousal caregiving context. Participants critiqued and confirmed the developing model. A theoretical model was constructed to explain the influences of self-care within the context of caregiving for a spouse or partner with a PBT. A number of factors influence caregiver self-care performance, however the basic psychosocial process that explains their motivation for self-care was reciprocating intimacy as communicated through domains of connectedness, touch and shared values and goals. Caregivers seek to find and fill voids where intimacy is not reciprocated as an attempt to restore 'wholeness' in their lives. Providers can make a significant difference in caregivers' lives by listening to and understanding the context of how the PBT affects both members of the spousal/partnered dyad. Tailored messages to caregivers in each stage of the PBT disease trajectory may lessen the burden on a caregiver's health. Research is needed that measures relationship factors such as intimacy in the spousal/partnered relationship and aim interventions at caregivers with greatest risk for adverse health outcomes.

**1408793**

#### **HEALTH-RELATED QUALITY OF LIFE OUTCOMES: A REFLEXOLOGY TRIAL WITH ADVANCED BREAST CANCER PATIENTS.**

Gwen K. Wyatt, RN, PhD, Michigan State University, East Lansing, MI; Alla Sikorskii, MS, PhD, Michigan State University, East Lansing, MI; Mohammad H. Rahbar, PhD, University of Texas at Houston, Houston, TX; David Victorson, PhD, Northwestern University, Chicago, IL; Mei You, MS, Michigan State University, East Lansing, MI

**Underwriting/Funding Source:** National Institutes of Health, National Cancer Institute

**Objective:** At the end of this session, participants will be able to discuss the findings of a reflexology trial with breast cancer patients including safety outcomes and its usefulness in relieving dyspnea and enhancing functional status.

Women with advanced breast cancer represent 38% of all new breast cancer cases each year. Further, this cohort experiences the burden of unmanaged symptoms resulting from the disease and its treatment. While conventional medicine provides standard symptom care (primarily through pharmaceutical means), more than 80% of women with breast cancer turn to complementary and alternative medicine (CAM) for symptom management. Unmanaged symptoms that lead to reduced health-related quality of life (HRQOL). The purpose of this study was to evaluate the safety and efficacy of reflexology, a CAM therapy hypothesized to improve HRQOL, which involves the application of pressure to specific areas of the feet.

A multisite randomized clinical trial was conducted to evaluate the safety and efficacy of reflexology on health-related quality of life (HRQOL) using an adapted framework put forth by Ferrans and modified by Wilson and Cleary. Thirteen Midwestern community-based medical oncology clinics participated in this trial. Women with advanced breast cancer (n=385) who were receiving chemotherapy and/or hormonal therapy were enrolled. Following the baseline interview, women were randomized to one of 3 primary groups: reflexology (Group A = 94), lay foot manipulation-LFM Group B = 95), or the conventional care control (Group C = 96); and two test groups: reflexology and LFM groups. Participants were interviewed again post-intervention at study weeks 5 and 11. The primary outcome variable was breast cancer specific HRQOL, which included physical functioning and symptoms. No adverse events were reported. A longitudinal comparison revealed significant improvements in physical functioning for reflexology Group A compared to control Group C (p = .04). Severity of dyspnea was lower in reflexology Group A compared to control Group C (p < .01), and compared to LFM Group B (p = .02). No differences were found on breast-cancer specific quality of life, depressive symptomatology, state anxiety, pain, and nausea. Reflexology may be added to existing evidence-based supportive care interventions to improve HRQOL for advanced-stage breast cancer patients during chemotherapy. Reflexology can be recommended for safety and for its usefulness in relieving dyspnea and enhancing functional status.

**1411207**

#### **ENRICHING ONCOLOGY NURSE KNOWLEDGE BY INCLUSION OF ORAL ADHERENCE EDUCATION IN A REQUIRED COMPREHENSIVE CHEMOTHERAPY AND BIOLOGICAL THERAPY COURSE.**

Lydia Wall, DNP, RN, UPMC Cancer Center, Pittsburgh, PA; Eileen Milakovic, RN, BSN, MA, OCN®, UPMC Cancer Center, Pittsburgh, PA; Margaret Pevarnik, MSN, RN, OCN®, UPMC Cancer Center, Pittsburgh, PA

**Objective:** The aim of this quality initiative project is to enhance knowledge of oral adherence in the oncology nurse population as a component of the nurses' required oncology education.

Adherence is defined as "the extent to which a patient's behavior coincides with medical advice." In a literature review, adherence to oral chemotherapeutic agents is estimated to be between 20% and 100%. Reasons for non-adherence are multifactorial and include lack of access to medication, administration issues, issues with knowledge and/or understanding, and broader issues comprising of patient-specific factors, patient-provider relationships, and healthcare system interactions. Current required oncology education includes a three-day Comprehensive Chemotherapy and Biological Therapies Course that is mandatory for all nurses who will be administering chemotherapy. Presently, oral adherence is not addressed. Beginning in the fall of 2012, this class will be extended to four days with one of the added components to include education focused around oral adherence. Prior to attending this course, those enrolled will be sent a survey to assess participants' foundational knowledge of oral adherence. The participants will remain anonymous and the survey will be completed via an online survey tool (Survey Monkey). Course material will focus on relevance to practice, barriers to oral adherence, and interventions to address adherence, all from a multi-disciplinary approach. A post-course evaluation will be completed which will assess participants' knowledge after completing the course. Data will be analyzed and presented at the ONS Connections Conference in November, 2012.



1412474

**MEN'S LIVED EXPERIENCE OF PROSTATE CANCER.** Kelly A. Krumwiede, PhD, Minnesota State University Mankato, Mankato, MN

**Objective:** Participants will be able to discuss men's lived experience with prostate cancer.

Exploring perceptions and experiences of men with prostate cancer will expand nurses understanding of the disease, as well as responses, coping mechanisms, and concerns that are prevalent. This understanding will enhance care for men by reducing anxiety, vulnerability, and uncertainty. Prostate cancer is the second most common type of cancer and second leading cause of death for men in the United States (US). The American Cancer Society estimates that 1 of 6 men will be diagnosed with prostate cancer during their lifetime. The purpose of this study was to investigate the lived experience of men who have been diagnosed with prostate cancer. Merle Mishel's mid-range theory of Uncertainty in Illness guided this qualitative research study. Attributes of ambiguity, complexity, unpredictability, and information form the foundation for the concept of uncertainty. The semi-structured, audio taped, interview technique and analysis were guided by van Manen's approach to gain an understanding of the lived experience. Ten men participated. Rigor was enhanced by sensitivity, researcher's ability to identify subtle nuances and cues in the data text that lead to meaning. Extended immersion, bracketing, use of triangulation, and an extensive audit trail were also used. Several themes and sub-themes were identified through Mishel's theoretical framework: 1) Ambiguity, 1a) Enduring Confusion Regarding PSA Levels, 1b) Worrying About the Course of the Disease, 1c) Wondering about the Reason Behind Being Diagnosed with Prostate Cancer; 2) Unpredictability, 2a) Waiting for Biopsy Results and Identifying Treatment Plan, 2b) Fear of Potential Recurrence; 3) Information, Seeking Information to Alleviate Anxiety; 4) Complexity, 4a) Simultaneously Experiencing Other Health Problems, 4b) Interpreting, Understanding, and Managing Effects of Treatment. The presence of uncertainty provided awareness as to what factors need to be addressed to help decrease emotional and physical strain on the prostate cancer experience. Uncertainty can potentially be reduced through interventions that assess for sources of uncertainty and then teach methods to manage uncertainty. Recommend future research to explore the spouse's lived experience of prostate cancer to highlight family focused needs.

1412508

**DEVELOPMENT OF A HEAD AND NECK CANCER RELATED EXTERNAL LYMPHEDEMA SCALE.** Jie Deng, PhD, RN, OCN®, Vanderbilt University, Nashville, TN; Barbara A. Murphy, MD, Vanderbilt University, Nashville, TN; Nancy Wells, DNSC, RN, FAAN, Vanderbilt University, Nashville, TN; Mary S. Dietrich, PhD, Vanderbilt University, Nashville, TN; Sheila H. Ridner, PhD, RN, FAAN, Vanderbilt University, Nashville, TN

**Underwriting/Funding Source:** ONS Foundation Mentored Planning Grant (RE01A) and Vanderbilt University School of Nursing Postdoctoral Fellowship

**Objective:** Oncology nurses will be able to describe the development process of a scale for grading external lymphedema in patients with head and neck cancer (HNC).

Patients with locally advanced HNC are usually treated with aggressive multi-modality regimens that often lead to a damaged lymphatic system and leave patients at risk for developing secondary lymphedema. However, little attention has been given to assessment of head and neck lymphedema. Our previous work demonstrated that application of available tools to assess

external lymphedema yielded variable rates of lymphedema prevalence and severity in patients treated for HNC. Furthermore, existing scales failed to capture important characteristics of this phenomenon. This may, in part, be due to the lack of a conceptual model describing lymphedema in the HNC population. The lack of carefully developed and validated instrument hampers research in this arena. To address this gap, we aimed to develop a scale for grading external lymphedema in patients with HNC. The study was directed by a conceptual framework of the continuum of fibrosis – lymphedema in patients with HNC, which has been used to guide our previous and current studies. This was a two-phase instrument development study. In Phase I, a proposed scale for head and neck external lymphedema was generated from 1) the study conceptual framework, 2) a literature review, and 3) analysis of data from our previous study. In that study we compared and contrasted four current lymphedema scales to grade external lymphedema in 103 patients with HNC. Subsequently, the proposed scale was revised based on the expert feedback. In Phase II, the revised scale was tested via direct physical examination of 30 HNC patients with facial swelling. The interrater reliability of the scale was evaluated. In Phase I, the Head and Neck External Lymphedema Scale (HN-LE) demonstrated good content/face validity. In Phase II, 30 patients with HNC were recruited and underwent examination. The age of patient participants was  $57.67 \pm 6.54$  (mean + SD). Forty percent of the participants had oropharyngeal carcinoma. The HNLE Scale had an acceptable interrater reliability, including 83% exact agreement on grading lymphedema severity, 100% within 1 grade, and kappa = 0.752 ( $p < .001$ ). Further development and psychometric testing of the HN-LE Scale in larger sample is ongoing.

1413319

**SYSTEMATIC REVIEW OF PSYCHOSOCIAL INTERVENTIONS FOR ANXIETY IN ADULTS WITH CANCER.** Nicol Hedgpeth, DNP, RN, NP, AOCN®, Long Beach Memorial Medical Center, Long Beach, CA, and Western University of Health Sciences, Pomona, CA

**Objective:** Identify psychosocial nursing interventions that are recommended for practice or likely to be effective.

The average lifetime risk of developing any type of cancer is 44% for men and 37% for women. Anxiety is a common reaction to the diagnosis, treatment, and survival of cancer. The Institute of Medicine identified strong evidence for support of psychosocial interventions in cancer care. Oncology Nursing Society practice guidelines integrate psychosocial care into standard practice protocols. In order to provide quality cancer care, patients' psychosocial needs must be addressed. Due to the volume of data available to guide practice, systematic reviews are necessary to consolidate findings and provide evidence-based recommendations for practice. The purpose of this systematic review is to evaluate the data available on psychosocial interventions for anxiety in adult cancer patients in order to provide recommendations for. A process of knowledge development model for translation of research into usable recommendations for practice was developed utilizing Beth L. Rodgers' philosophy of problem solving and Everett M. Rogers' diffusion of innovations theory. Publications addressing psychosocial interventions for anxiety in adult cancer patients in English between May 2008 and June 2011 were extracted from PubMed, CINAHL, and the Cochrane Collaboration. Twenty two articles were identified as meeting study criteria. These 22 articles were reviewed and a quality rating was assigned. Quality was assessed via a quality rating scale as well as an expert advisory panel utilizing the Putting Evidence into Practice Decision Rules for Summative Evaluation of Evidence. Utilization of a quality rating scale was time-intensive and provided no significant benefit. Quality assessment via consensus

utilizing the PEP Decision Rules and an expert advisory panel generated usable recommendations for practice. Expert panel review provided data that proved most valuable to the clinician for providing recommendations for practice. Consensus methodology was affirmed and recommendations for future research were identified. For the prevention and treatment of anxiety in adult cancer patients, supportive-expressive therapies were identified as being recommended for practice, while cognitive behavioral therapy, psychoeducational interventions, progressive muscle relaxation, and coaching were identified as likely to be effective.

#### 1414510

##### **RESTRICTED SLEEP INCREASES PACLITAXEL-INDUCED MECHANICAL SENSITIVITY IN SPRAGUE DAWLEY RATS.**

Sharon L. Kozachik, PhD, RN, JHU/APL, Baltimore, MD; Gayle Page, DNSc, RN, FAAN, JHU/APL, Baltimore, MD

**Underwriting/Funding Source:** National Institute of Nursing Research (K01 NR011321); ONS Foundation through and unrestricted grant from the Oncology Nursing Society and the Sigma Theta Tau International Foundation for Nursing; 2008 American Nurses Foundation, Lucille V. Lukens Award

**Objective:** To describe the effects of sleep loss on paclitaxel-induced neuropathy.

1.6 million Americans will be diagnosed with cancer in 2012. Paclitaxel (PAC), a commonly used chemotherapy, is associated with a painful, dose limiting neuropathy. Insomnia affects 70 million Americans; thus, many newly diagnosed cancer patients may have co-morbid poor sleep. There is a bidirectional association between pain and sleep. Determining the effects of poor sleep on PAC-induced neuropathy is needed. The purposes of this study were to determine (1) the immediate, accumulative effects of restricted sleep on PAC-induced mechanical sensitivity; and (2) the sustained effects of restricted sleep on PAC induced mechanical sensitivity. A translational approach modeled the human experience of sleep onset insomnia and chemotherapy. 62, adult Sprague Dawley rats (n=31 females) completed this 2x2x2 study. Rats were randomly assigned to PAC versus saline (VEH) and unperturbed sleep versus restricted sleep, where rats were kept awake during the first 6 hours of lights on after each injection. Rats met baseline 50% paw withdrawal threshold (PWT, >10 grams) via von Frey Hair (VFH) testing. Intraperitoneal PAC (1 mg/kg) or VEH (1 ml/kg) was injected on days 1, 3, 5, 7 (8-14 no drug, recovery sleep), just prior to lights on; this cycle was repeated twice (days 15-28, 29-42). The PAC dose translated to a clinical dose. Rats were weighed 3 times per week; VFH testing occurred during the latter portion of the light phase, through day 42. ANOVA with Fisher's Least Significant Difference were run. The Johns Hopkins University Animal Care and Use Committee approved this study. No main or interaction effects of sex found, data pooled for analyses. PAC and VEH-injected, sleep restricted rats had significantly lower 50% PWT (cumulative 4 mg/kg F[3] = 5.29,  $p < 0.01$ ; 8 mg/kg F[3] 5.51,  $p < 0.01$ ; 12 mg/kg F[3] 5.11,  $p < 0.01$ ). VEH injected, sleep restricted rats had 50% PWT comparable to PAC injected, unperturbed sleep rats. The sustained effects of restricted sleep on PAC-induced mechanical sensitivity became significant 7 days after the 12 mg/kg cumulative dose (F[3] 6.05,  $p < 0.01$ ). Over time, recovery sleep was not sufficient for PAC injected, sleep restricted rats to recover 50% PWT. VEH injected, sleep restricted rats returned to baseline 50% PWT after each recovery sleep period. VEH injected rats developed minimal sensitivity, perhaps due to testing during lights on (inactive phase). 14% of PAC injected, unperturbed sleep rats never developed mechanical sensitivity, comparable to what is seen clinically. If these relationships hold in humans, findings can be used to develop and test interventions that may improve sleep and pain outcomes, and quality of life. Nurses should assess sleep at each oncology visit and proactively intervene.

#### 1414545

##### **GLYCEMIC STATUS AND INFECTION TRENDS IN AUTOLOGOUS HEMATOPOIETIC CELL TRANSPLANTATION.** Marilyn J. Hammer, PhD, DC, RN, New York University, New York, NY; Gail D. Melkus, EdD, C-NP, FAAN, New York University, New York, NY; Tish Knobf, PhD, RN, FAAN, AOCN®, Yale University, New Haven, CT

**Underwriting/Funding Source:** National Institutes of Health/National Institute of Nursing Research

**Objective:** Evaluate glucose as a risk factor for infections in cancer.

Infections are a potentially life-threatening outcome in patients with cancer and can occur due to immunosuppression from the cancer and treatments. Hyperglycemia contributes to immunosuppression. Understanding contributors to hyperglycemic events; hyperglycemic-induced immunosuppression; and associations between hyperglycemia, impaired immune responses, and infection onset are essential for enhancing blood glucose (BG) control. Optimizing glucose levels in patients with cancer can lead to better outcomes. Independent of diabetes, hyperglycemia can occur in patients with cancer due to multiple factors. Hyperglycemia impairs immune function, creating susceptibility to infections. Infections themselves can promote hyperglycemia. Knowledge about the pathophysiology of hyperglycemic-induced immunosuppression in a cancer environment is lacking. This study is investigating associations between glycemic status, contributors to hyperglycemic events, immune function, and infections in patients with hematological malignancies receiving autologous hematopoietic cell transplantation (HCT). The theory of cancer immune surveillance. All non-diabetic adult patients scheduled to receive autologous HCT are eligible. We evaluate BG and infection trends from 5 days prior to HCT through 28 days post-HCT. Daily morning fasting BG is collected. Hyperglycemia is defined as >100 mg/dL. Infections are documented by positive culture. To date, we have recruited 54% of the targeted enrollment (N=75). Descriptive analyses and Pearson's correlations are being conducted. This ethnically diverse sample of 41 subjects (21 females) who completed data collection yielded 724 BG measurements. Mean age was 56.2 years and mean body mass index was 28.2. Mean BG from day - 5 through day 28 was 94.38 mg/dL (range 35-485), with an early mean post-HCT peak of 104.56 mg/dL on day 4. The infection incidence was 44% (N=18), with 31 documented infections, including gram+/- bacteremias, cytomegalovirus, and fungi. There was a statistically significant association between BG at 24 and 48 hours prior to a documented infection ( $p=0.021$  and  $p=0.037$ , respectively). This interim analysis emphasizes the contribution of glycemic status to infection onset in HCT recipients. Further exploration of the underlying pathophysiology and clinical manifestations will lead to interventions for better glycemic control and ultimately, enhanced outcomes.

#### 1414547

##### **STANDARDIZATION OF CHEMOTHERAPY ADMINISTRATION: A MULTIDISCIPLINARY PROCESS UTILIZING E-LEARNING VIGNETTES.** Anna Vioral, MSN, MEd, RN, OCN®, West Penn Allegheny Health System, Gibsonia, PA

**Objective:** To describe oncology nurses knowledge of new chemotherapy safety standards and satisfaction of education using simulated e-learning vignettes.

Investigating oncology nurses' knowledge of the entire administration process, developing standards of practice, providing education of the standards, and re-evaluating the nurses' knowledge may contribute significant findings to address error reduction in chemotherapy administration. The complex multi-



disciplinary process involved with chemotherapy administration demands standardization of processes and education to decrease errors and increase safety. EL offers a comprehensive, high-quality, cost-effective teaching strategy for implementation and evaluation. The aims of this study include determining if oncology nurses' use of simulated e-learning (EL) vignette modules increases their knowledge of the American Society of Clinical Oncology (ASCO) and Oncology Nursing Society (ONS) chemotherapy safety standards over time and describing the oncology nurses' satisfaction with the simulated EL vignette modules. Lewin's theory utilizes a three-stage model of change: "un-freezing" the existing "mind-set" or policies; change over time to the new concepts; and "re-freezing" a new mindset with new standards. The study utilized a quasi-experimental longitudinal (pre/post-test, one-month follow-up), one group design. Of 154 eligible chemotherapy nurses from a large multi-hospital system, 66 completed the study. A demographic questionnaire, simulated EL chemotherapy administration error vignette, vignettes on the ASCO and ONS chemotherapy standards of practice, and an EL satisfaction tool were used. Repeated measures analysis of variance (RM-ANOVA) was used to compare oncology nurses' pre- and post-EL vignette means of chemotherapy errors over time and satisfaction was also measured. A RM-ANOVA showed the mean number of error scores differed significantly across time points.  $F(2,130) = 6.184, p = .003, \eta^2 = .087$ . A statistically significant increase of .75 errors identified from pre- to post-test was seen. The one-month follow up was also statistically significant with the number of errors identified returning to the pre-test level. Participants were more satisfied with the content and overall satisfaction than with the delivery and system methods. A significant relationship between age and system and delivery satisfaction was noted. Nurses over 48 had lower system and delivery satisfaction than nurses under 47. No significant differences were seen in content satisfaction. These findings indicate that follow-up should occur to reinforce the new standards and that staff may require more education with e-learning and technology as an educational strategy. Future research should include retrospective error reduction studies.

#### 1414819

### COLORECTAL CANCER AWARENESS IN INDIAN COUNTRY: THE ROLE OF THE NATIONAL CANCER INSTITUTE COMMUNITY CANCER CENTERS PROGRAM (NCCCP) ADVANCED PRACTICE NURSE NAVIGATOR.

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**Underwriting/Funding Source:** National Cancer Institute, National Institutes of Health, No. HHSN261200800001E

**Objective:** Discuss the critical role of the Advances Practice Nurse plays in improving colorectal screening participation in disparate populations.

Nursing roles are expanding to address rural underserved populations. An Advanced Practice Nurse Navigator role was developed to provide education on cancer awareness, prevention, and screening in a disparate American Indian (AI) population. Cancer is the leading cause of death in Montanan AIs. Colorectal cancer (CRC) screening and early detection rates are alarmingly low (< 47%) for Montana AIs. Indian Health Service (IHS) clinics have limited resources directed at cancer services. The navigator role was created through the NCCCP to improve the access to quality cancer care and improved rural patient outcomes. The Outreach Navigator works with a team of providers, public health advocates and community leaders to increase AI colorectal screening rates. The navigator provides education on the importance of screening, the success of early stage CRC treatment, and the use of the immunochemical fecal occult blood test (IFOBT) kits. The kits are distributed during small group education ses-

sions, at IHS and rural provider's offices and public health nurses provide kit at home visits. A patient mails the completed kit to the regional cancer center lab. The Outreach Navigator receives the IFOBT results, reports results to the patient and the provider, and assists with colonoscopy scheduling for positive results. The Outreach Navigator maintains contact with patients to assure the needed follow-up is completed, assisting with ongoing barriers such as patient understanding and logistics such as transportation. Over 380 kits have been distributed through the program to date, with 60% of kits returned and 8 positive test results requiring follow up. More importantly, IHS has established the use the IFOBT kit for colorectal screening as best practice for Billings Area IHS Service Units and has integrated cancer screening standards into the case management role. The Outreach Navigator plays a vital role in changing AI practice of CRC screening. She serves as a role model and is instrumental in developing a sustainable program that can be replicated in other disparate groups.

#### 1414930

### CANCER TREATMENT-INDUCED SYMPTOMS AND INFORMATION NEEDS OF ELDERLY SURVIVORS WITH GASTROINTESTINAL CANCER.

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**Underwriting/Funding Source:** the Korea Research Foundation (KRF) grant funded by the Korea government (MEST) (No. 2009-0069945)

**Objective:** Upon the completion of this presentation, the participants will be able to address the levels of symptom experience and information needs among elderly GI cancer survivors.

Elderly survivors with gastrointestinal (GI) cancers are estimated as a largest survivor group in number in South Korea. Elderly survivors often experience physical and psychological symptoms due to the series of cancer treatments and the loss of digestive organs in addition to having their normal ageing symptoms. There is paucity in research particularly focusing on elderly cancer survivors' symptom experience and information needs. This descriptive study, thus, was aimed to investigate symptoms frequently experienced and the ranks of information needs among elderly GI cancer survivors. The conceptual model of elderly cancer survivorship by Bellury et al. was utilized. This study used a cross-sectional descriptive survey design. A total of 115 elderly over age 60 who had finished their primary treatment of GI cancers was recruited from a university-affiliated cancer center in South Korea. The symptom experience was measured by MD Anderson Symptom Inventory (MDASI) and the information needs by Patient Information Needs Questionnaire (PINQ). The self-reported questionnaires were administered to the participants in outpatient settings as they visited for follow-ups. The mean age of the participants was 67.25, and 74% (85 persons) was male. More than half of them (52%, 60 persons) was diagnosed with colorectal cancers and followed by stomach (30%), and gallbladder (5%). The mean period since cancer diagnosis was 23.7 months. The mean MDASI score was 4.23 out of 10 indicating the participants still experienced various symptoms at a moderate level. Three most frequently experienced symptoms included anorexia ( $6.83 \pm 3.05$ ), fatigue ( $5.63 \pm 2.48$ ), and sorrow ( $5.24 \pm 3.53$ ), which implied the status of lacking energy among the participants. The mean PINQ was 3.51 out of 4, indicating the participants had a large need in seeking information. The top 4 types of information they needed were 'treatment results' ( $4.00 \pm .00$ ), 'immediate help' ( $3.88 \pm .38$ ), 'health status' ( $3.80 \pm .48$ ), and 'prognosis' ( $3.73 \pm .52$ ). The findings of the study imply that the participants have stagnant symptoms even a year after cancer treatment completion. Also, there are many rooms for oncology nurses to meet the information needs of the elderly GI cancer survivors.

## 1414959

**PUBLICATION STRATEGIES FOR BUILDING YOUR RESEARCH PORTFOLIO.** Anne Katz, PhD, RN, CancerCare Manitoba, Winnipeg, Manitoba, Canada; Deb Mayer, PhD, RN, AOCN®, FAAN, University of North Carolina, Chapel Hill, NC

**Objective:** To identify key strategies for researchers to build their research portfolio in order to maximize impact and outreach.

This presentation will provide expert guidance from the editors of two high impact nursing journals on how best to maximize the impact of research reports and findings. Many researchers are not excellent writers and they struggle to publish their work, no matter how important the results of their studies. With the pressure of academic departments and hospitals/clinics on publishing in high impact journals, how can researchers target appropriate journals and how can they optimize their chances of being published in high quality journals? Current economic conditions impact on advertising dollars resulting in fewer pages being available in journals so competition for space is fierce. What does it take to improve your chances of acceptance and how can you work smarter to increase your output and ultimately influence practice? This presentation will describe pertinent strategies for improving writing and maximizing opportunities for publication based on the presenters' years of experience as editors, reviewers and writers. Building a research portfolio is much more than publishing two to three articles per year as is required by many academic departments. It requires looking to the future with a critical eye, choosing to publish strategically, learning to write through practice and judicious reviews of others' writing, and constant revision of goals and objectives. This presentation will focus on the translation of research to the written word and then transportation of that to the larger world of nursing and oncology care through a successful publication plan that maximizes effort and industry to build a career that changes practice and increases the body of knowledge of oncology nursing.

## 1415652

**REDUCTION OF EROSION RISK IN ADULT PATIENTS WITH IMPLANTED PORTS.** Mary Weis, ACNS-BC, St. Cloud Hospital, St. Cloud, MN; Jennifer Burris, RN, MA, CNS, St. Cloud Hospital, St. Cloud, MN

**Objective:** The objective of this project was to decrease the percent of port erosions per year to 1 % as reported in the literature.

One of the most common venous access device utilized in the oncology patient is the implanted port. Implanted venous access ports are used because of reliability, infrequent complications, and most significantly out of convenience for the patient. While incidences of infection and thrombosis are the most common reported complications (occurring in about 6% of patients), erosion of the device is rarely reported. Following an extensive literature review, erosion rates of venous access ports is estimated at nearly 1%, although the incidence is likely under reported. The purpose was to develop multidisciplinary interventions, based on evidence, to reduce post erosion rates. A review of 498 charts from a 20-month period at St. Cloud Hospital found a port erosion rate of 3.2%. A multidisciplinary team was formed to evaluate the literature and current practice. This team was led by Advance Practice Nurses and also included physicians, registered nurses, and radiology technicians. Interventions included practice changes, product changes and education. Power port product changes were completed twice during the process; first to a port with lower palpations bumps and then to a port without palpation bumps. Access needles were changed in size from 19 to 20 G and all needles were standardized to power access needles. Securement dressing

were upgraded with subsequent staff education. Radiologists conducted a site insertion technique review for depths of 0.5 to 2.0 cm. Premarking of female patient sites included an analysis of the bra strap line. Patients were educated on port protection techniques. Staff education on accurate documentation of port assessments was conducted. In addition, oncologists considered the timing of bevacizumab in relation to port insertion. Eroded devices were sequestered and sent for manufacturer review. Erosion rates decreased to 1.2% within 6 months of practice changes. Practice changes were multidisciplinary and included an analysis of each aspect of care. Oncology nursing requires collaborative processes using evidence to improve care. At the beginning of the project, nurses were reluctant to accept that they could impact a change – many nurses felt the ports were implanted too shallow and that the erosion was inevitable based on disease progression. By evaluating the variables, changes were implemented and a reduction in erosions was seen. Team members were able to respect the impact of each of their roles with an unexpected but positive outcome. Practice changes were implemented based on evidence with subsequent measurement planned for 18 months.

## 1415869

**CHEMOTHERAPY DELAY OF AFRICAN AMERICAN (AA) AND WHITE (W) WOMEN UNDERGOING CHEMOTHERAPY FOR BREAST CANCER.** Margaret Q. Rosenzweig, PhD, University of Pittsburgh, Pittsburgh, PA; Kathleen H. Slavish, BA, University of Pittsburgh, Pittsburgh, PA; Catherine M. Bender, PhD, RN, FAAN, University of Pittsburgh Pittsburgh, PA

**Underwriting/Funding Source:** ACS RSGT-09-150-01-CPHPS

**Objective:** To determine etiology of patient delay in chemotherapy as compared by race.

There is racial disparity in breast cancer treatment, often related to chemotherapy treatment delay of unknown etiology. We compared chemotherapy delay between matched AA and W women during chemotherapy overall and then delineated cause of delay by patient choice or clinical necessity. The World Health Organization defines 5 dimensions of medication adherence including social, provider, condition, therapy and patient. Patient factors include health beliefs regarding value and need for medication. A pilot secondary analysis of an ongoing randomized controlled trial of "The ACTS Intervention to Encourage Adherence to Recommended Breast Cancer Treatment" targeted exclusively to AA women with breast cancer receiving chemotherapy was conducted to determine racial differentiation in treatment delay during breast cancer chemotherapy. The trial opened January, 2010. For this analysis, the African American usual care group (no specific encouragement) was utilized. The comparison group was created with W women receiving chemotherapy in the same urban breast cancer clinic during the same time period. Patients were matched 1:1 for age and breast cancer stage. Treatment delay was measured as mean cumulative days from scheduled chemotherapy. Delays were then assigned attribution by blinded reviewer of medical records to clinical reasons or patient choice. Descriptive statistics and matched pair T tests were used for analysis using SPSS v.19. Twenty-two matched pairs were formed. Mean age was 52 for W women, 50 for AA women. Mean days to chemotherapy initiation from MD recommendation were not significantly different, 14.9 days for AA, 16.3 days for W women. Overall delay for AA women of 8.1 days vs. W women's mean 2.3 days, ( $p=.06$ ) approached significance. Delay due to patient choice was 4.3 days for AA women, 0.9 days than W women, ( $p=.02$ ). Delay due to clinical reason was non-significant with 3.9 days for AA women and 2.3 days for W women ( $p=.4$ ). This awareness that AA women tend to experience more delay by choice during chemotherapy is important.

These findings can guide targeted education toward health beliefs and the value of medication. These intriguing preliminary findings should be expanded to a large scale study among AA women. Relationship of delay to symptom experience and distress should be analyzed.

**1415968**

**SYMPTOM PREVALENCE AND SEVERITY DURING ACTIVE TREATMENT FOR A PRIMARY MALIGNANT BRAIN TUMOR (PMBT).** Paula Sherwood, RN, PhD, CNRN, FAAN, University of Pittsburgh, Pittsburgh, PA; Charles W. Given, PhD, Michigan State University, East Lansing, MI; Barbara A. Given, PhD, RN, FAAN, Michigan State University, East Lansing, MI; Chien W. Choi, University of Pittsburgh, Pittsburgh, PA; Jason Weimer, MA, University of Pittsburgh, Pittsburgh, PA; Heidi S. Donovan, PhD, RN, University of Pittsburgh, Pittsburgh, PA  
**Underwriting/Funding Source:** National Cancer Institute

**Objective:** The learner will be able to identify the most common and severe symptoms during treatment for a PMBT.

Symptom management is a high priority for this population, particularly considering its impact on adherence to therapy and the high rates of mortality accompanying diagnosis which underscore the importance of quality of life during and after treatment. Temozolomide is a primary treatment for persons with a PMBT, yet there is little data regarding its side effects. The purpose of this study was to determine the frequency and severity of symptoms during active temozolomide therapy. Adapted Pittsburgh Mind Body Center Model. As part of a prospective, longitudinal study, 129 patients >18 years old and newly (within a month) diagnosed with a PMBT were recruited from neurosurgery and neuro-oncology clinics. Symptom data were collected during face-to-face interviews at four months following diagnosis using the MD Anderson Symptom Inventory-Brain Tumor Module, which has established reliability and validity. Descriptive analyses were used to identify the most common symptoms and average severity of those on temozolomide. Between those on (N=75) versus not on (N=54) temozolomide, two-sample proportion tests compared symptom prevalence and Mann Whitney U tests compared severity. Over one-half of those on Temozolomide reported the following symptoms: fatigue, distress, difficulty remembering, sadness, drowsiness, difficulty concentrating, irritability, weakness, difficulty understanding, and difficulty sleeping. Vomiting, shortness of breath, and seizures were significantly ( $p < .05$  for all three) more common in those on temozolomide versus those not on temozolomide. Patients on temozolomide had a mean symptom severity >4 on the following symptoms: vision changes, nausea, fatigue, weakness, appetite changes, bowel changes, drowsiness, and pain. There were no significant differences in symptom severity between those on versus not on temozolomide. Results are among the first to describe symptom prevalence and severity during active treatment for a PMBT. Clinicians should target symptoms with high prevalence and moderate-high severity for intervention to prepare the patient and family for symptom management. Future research should target determining independent associations between symptoms and radiation, temozolomide, and tumor burden.

**1416228**

**MEASURING VINCRIStINE-INDUCED PERIPHERAL NEUROPATHY IN CHILDREN.** Ellen M. Smith, PhD, APRN-BC, AOCN®, University of Michigan, Ann Arbor, MI; Jamie Renbarger, MD, Indiana University, Indianapolis, IN; Raymond Hutchinson, MS, MD, University of Michigan, Ann Arbor, MI; Elizabeth Wells, MD, Children's National Medical Cen-

ter, Washington, DC; Bryan Burnette, MD, Vanderbilt, Nashville, TN; Richard Ho, MD, Vanderbilt, Nashville, TN

**Objective:** The objective of this abstract is to inform nurses and other health professionals regarding reliable, valid, and clinically feasible approaches for quantifying vincristine-induced peripheral neuropathy in children.

Vincristine is a mainstay treatment for pediatric leukemia. Adequate dosing is linked to improved survival, but vincristine-induced peripheral neuropathy (VIPN) is a dose-limiting side effect that compromises quality and quantity of life. Reliable and valid VIPN assessment guides vincristine dosing, but VIPN-related numbness, tingling, and neuropathic pain are difficult sensations to quantify in young children. This longitudinal, prospective study was designed to determine the reliability, validity, sensitivity to change, and clinical utility of a composite measure, the Total Neuropathy Score -Pediatric Vincristine (TNS-PV), for use by nurses when assessing VIPN in children with leukemia. A norm-referenced measurement framework guided this research. VIPN was assessed using the TNS-PV, the Balis and National Cancer Institute Common Toxicity Criteria (NCI-CTC v. 4.0) grading scales, and the FACES pain scale. Blood was obtained 15 and 30 minutes post vincristine treatment on Day 8 of induction therapy for determination of pharmacokinetic parameters. Construct validity was assessed based on the correlations between TNS-PV scores, cumulative vincristine dosage, and pharmacokinetic parameters. Convergent validity was determined based on the correlations among the TNS-PV, grading scales, and FACES scores. TNS-PV score attainability by age was used to assess clinical utility. TNS-PV scores ( $n = 806$ ) were obtained from 65 children over 15 weeks. The mean age was 7.5 years (SD 4.4). Cronbach's alpha for a reduced TNS-PV scale was 0.86. TNS-PV scores correlated with cumulative vincristine dosage ( $r = 0.31 - 0.58$ ,  $p = 0.05 - 0.006$ ), and grading scale scores ( $r = 0.46 - 0.67$ ;  $p = 0.05 - 0.01$ ). Pharmacokinetic analyses are pending. The FACES score correlated moderately with the TNS-PV neuropathic pain item ( $r = 0.40$ ;  $p = 0.05$ ). Both grading scales were insensitive to change (es 0 - 0.22,  $p = \text{NS}$ ). A 2-item TNS-PV score (comprised of reflex and vibration items) was very sensitive to change (es 1.15-1.21,  $p < 0.001$ ). Ninety-six percent of TNS-PV scores were attainable in children  $\geq 6$  years of age. FACES scores were attainable in children of all ages. Using the TNS-PV and the FACES scale, nurses can obtain reliable and valid VIPN assessments in children  $\geq 6$  years of age.

**1416397**

**MEDIATORS OF SOCIAL CONNECTION INTERVENTION IN AFRICAN AMERICAN WOMEN WITH BREAST CANCER.**

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**Underwriting/Funding Source:** National Cancer Institute, R01CA107305

**Objective:** Describe one method for testing mediation in a randomized controlled trial and discuss the results of testing for mediators in a selected study.

The paucity of theory-based interventions to improve psychosocial outcomes in African American women with breast cancer (AAWBC), a population with known health disparities is a major gap in cancer nursing research. An even greater gap is in understanding how interventions exert their effects (i.e. mediation). We demonstrated improved social connection (SC), an important psychosocial outcome, when testing a randomized controlled trial (RCT) of a therapeutic group by telephone. The purpose of the current investigation is to determine if theorized factors, fear, fatalism and isolation mediated the effects of SC in this RCT. We developed a conceptual model for SC in AAWBC. SC is a positive relational



state involving perceptions of emotional closeness to social network members. Negative psychosocial outcomes may occur if important connections are not maintained or replaced after a cancer diagnosis. We theorized that SC would be improved through an intervention that focused on developing positive bonds with group members, decreasing cancer fears and myths and learning how to communicate about cancer and its treatment to family and friends. We hypothesized that decreasing fear, isolation and fatalism would improve SC; these factors were conceptualized as mediators of SC. The overall study design was a RCT. We recruited 185 African women with invasive ductal carcinoma, treated with lumpectomy and either radiation or chemotherapy or both. Assessments included SC, fatalism, fear, isolation and demographic measures and were completed at baseline and 16 weeks post baseline. Mediation was tested using MacKinnon's product of coefficients method. This test involves estimating the effect of the intervention on changes in each potential mediator (alpha coefficient), estimating the effect of changes in the mediator on changes in the outcome (beta coefficient), and constructing asymmetric confidence limits based on the distribution of the product. This method has been shown to have more accurate type-I error rates and statistical power than other methods. All models included education and physical well being as covariates due to baseline differences. No significant mediation was found for fear, fatalism or isolation. Our findings suggest that other unidentified, and non-measured, variables may mediate changes in SC. Refinement of our model is needed.

#### 1416537

### DEVELOPMENT OF A COMPUTER-BASED TOOL TO EXPLORE SYMPTOM CLUSTERS IN ADOLESCENTS WITH CANCER.

Lauri Linder, PhD, APRN, CPON®, University of Utah, Salt Lake City, UT, and Primary Children's Medical Center, Salt Lake City, UT; Catherine Fiona Macpherson, RN, BSCN, MSN, PhD, CPON®, Seattle Children's Hospital, Seattle, WA, and University of Washington, Seattle, WA; Kristin Stegenga, RN, PhD, CPON®, Children's Mercy Hospital, Kansas City, MO; Suzanne Ameringer, PhD, RN, Virginia Commonwealth University, Richmond, VA; Jeanne Erickson, PhD, RN, AOCN®, University of Virginia, Charlottesville, VA; Nancy Woods, PhD, RN, FAAN, University of Washington, Seattle, WA

**Underwriting/Funding Source:** St. Baldrick's Foundation

**Objective:** Describe a newly-developed computer-based tool to explore symptom clusters in adolescents with cancer.

Dominant approaches for studying symptom clusters include multivariate statistical methods to identify clusters from patient-reported symptoms. Symptom cluster heuristics is an alternate methodological approach that explores patients' interpretation and meaning of the symptom cluster experience. The purpose of this report is to describe the development of a computer-based symptom cluster heuristics tool, the Computerized Symptom Capture Tool (C-SCAT), to explore symptom clusters experienced by adolescents receiving chemotherapy. Adolescents with cancer experience multiple co-occurring interrelated symptoms due to their disease and its treatment that may have a greater synergistic negative impact on their quality of life than any single symptom. Few studies have examined symptom clusters in adolescents with cancer. No studies have explored adolescents' own perceptions of how their symptoms cluster together. The C-SCAT is an iPad application that integrates innovative and developmentally meaningful technology in a novel approach to study symptom clusters. From a menu of 30 symptoms, the C-SCAT directs adolescents to drag and drop symptoms experienced within the past 24 hours into a designated area on the screen. Pop-up windows ask about possible causes, alleviating/exacerbating factors, attempted self-management strategies, and the effect of the symptom on daily activities. Adolescents can draw arrows to indicate causal and

temporal relationships among symptoms and to circle clusters of symptoms that they perceive to be related. Additional pop-up windows guide adolescents to provide names for symptom clusters and to identify key symptoms within clusters. The C-SCAT generates a final graphical image that includes individual symptoms, relationships between symptoms, symptom clusters, and priority symptoms within clusters. The C-SCAT shifts the paradigm for studying symptom clusters from multivariate statistical approaches to an inductive approach that considers how adolescents interpret and give meaning to their clusters of symptoms and empowers adolescents to identify symptom clusters from their perspective. The C-SCAT may facilitate adolescent-provider communication for partnership in management of symptom clusters and inform the development of cluster-focused interventions. It has potential use across other age groups, the cancer treatment continuum, and other disease states.

#### 1416713

### F2 ISOPROSTANES: A MEASURE OF OXIDATIVE STRESS IN CHILDREN RECEIVING TREATMENT FOR LEUKEMIA.

Marilyn J. Hockenberry, PhD, RN, CS, PNP, FAAN, Baylor College of Medicine, Houston, TX; Ki Moore, DNSc, RN, FAAN, University of Arizona, Tucson, AZ; Olga Taylor, MPH, BS, Baylor College of Medicine, Houston, TX; David Montgomery, PhD, University of Arizona, Tucson, AZ; Patricia Gundy, BS, University of Arizona, Tucson, AZ; Adam Ross, University of Arizona, Tucson, AZ

**Underwriting/Funding Source:** National Institute of Nursing Research

**Objective:** To evaluate changes in levels of oxidative stress determined by the concentration of F2 isoprostanes in the cerebral spinal fluid of children with leukemia during the first year of therapy.

There is growing evidence that methotrexate increases oxidative stress, a potential mechanism of central nervous system (CNS) injury. F2 isoprostanes are a well-established and validated measure of oxidative stress and may be useful markers of CNS tissue injury during childhood leukemia treatment. Acute lymphoblastic leukemia (ALL) is the most prevalent cancer among children less than 15 years of age and survival rates exceed 85%. Essential for cure is prophylactic treatment of the central nervous system (CNS), with methotrexate being the most widely used drug. While CNS treatment has contributed to long-term disease-free survival, resulting declines in academic abilities, especially math and reading, among children and adolescents with ALL are reported. Methotrexate increases oxidative stress in several organs including the brain. White matter and the hippocampus are known to be vulnerable to oxidative stress, and are important for cognitive abilities, such as working memory, learning, visual-spatial and visual-motor skills. A longitudinal design was used to measure CSF F2 isoprostanes in 33 children with ALL during four treatment phases: diagnosis, induction (first 28 days of systemic chemotherapy), post-induction (aggressive CNS-directed chemotherapy for approximately 6 months) and maintenance (less aggressive systemic and CNS-directed chemotherapy lasting for approximately 2 ½ years). One hundred thirty-two CSF specimens were evaluated over the four phases of treatment. F2-isoprostane CSF concentrations ranged from 0.861 to 5.689 (mean = 3.63 pg/ml). F2- isoprostanes increased during induction therapy (mean = 5.43 pg/ml); however, the greatest increase in CSF F2- isoprostanes occurred during the most intensive phase of CNS treatment (post-induction) where the mean concentration was 7.56 pg/ml. Results using repeated measures ANOVA show a significant increase in the concentration of F2-isoprostanes during post-induction ( $F = 21.98$  (3,16),  $p < 0.0001$ ). This study evaluated oxidative assault and revealed that F2 isoprostanes can be used as a reliable biomarker for monitoring CNS tissue injury during childhood leukemia treatment.

1417248

**THE NURSE PRACTITIONER EXPERIENCE MANAGING UNRELIEVED SYMPTOMS OF CHEMOTHERAPY WITH ONCOLOGY OUTPATIENTS UTILIZING AN INTEGRATED ELECTRONIC CASE MANAGEMENT SYSTEM WITH AUTOMATED SYMPTOM REPORTING.** Stephanie Nagata, APRN, MS, FNP-BC, University of Utah, Salt Lake City, UT; Valerie Flattes, APRN, ANP-BC, University of Utah, Salt Lake City, UT; Amie Clark, APRN, FNP, University of Utah, Salt Lake City, UT, and Huntsman Cancer Institute, Salt Lake City, UT; Debra Wujcik, RN, PhD, AOCN®, FAAN, Vanderbilt University Medical Center, Nashville, TN; Susan L. Beck, PhD, APRN, AOCN®, FAAN, University of Utah, Salt Lake City, UT, and Huntsman Cancer Institute, Salt Lake City, UT; Kathi Mooney, RN, PhD, FAAN, University of Utah, Salt Lake City, UT, and Huntsman Cancer Institute, Salt Lake City, UT

**Underwriting/Funding Source:** National Cancer Institute grant (R01CA120558)

**Objective:** Evaluate a computer based automated telephone monitoring system with Nurse Practitioner (NP) follow-up for unrelieved chemotherapy side effects using guideline-based algorithms.

Side effects of chemotherapy are often inadequately managed in the outpatient setting. As part of a multi-site clinical trial, eight NPs utilized an integrated electronic system for symptom monitoring and management in two diverse practice settings. This presentation describes the key features of the system, highlighting how evidence-based practice guidelines were used in system design. The advantages and challenges of NPs using the system to provide care were also described. Patients called the automated system daily to report severity and distress levels of 11 symptoms. NPs received automated alerts for symptoms exceeding a specified threshold and emerging trends. The Case Management System (CMS) cued the NP with recommended assessments, pharmacologic and nonpharmacologic interventions, and documentation. Relevant practice guidelines were generated from the National Comprehensive Cancer Network, Oncology Nursing Society, and the Multinational Association of Supportive Care in Cancer with links to the detailed guidelines. NP interventions were prompted and documented with action step checkboxes. The NPs accessed information and documented their actions in the patient's electronic health record. NPs made 1756 follow-up telephone calls to 173 patients. Average call time was seven minutes. Advantages to the NP were access to daily assessments and alerts, easy-to-use care guidelines, and mobility of the system. NPs helped patients sort out and effectively manage the array of medications they had been prescribed. Comorbidities, especially in the elderly, made the care complex and not as straightforward as the guidelines suggest. Some patients requested a higher alert threshold for NP contact. In some cases, restrictions on Medicaid reimbursement created barriers to guideline adherence. The NP-patient interactions provided a continuous communication link with a healthcare provider familiar with their chemotherapy regimen. The NP is in a key position to assist patients with coping and managing multiple adverse treatment-related symptoms at home. The CMS should be integrated and evaluated in other clinical settings.

1417399

**OSTOMY COMPLICATIONS AND ASSOCIATED RISK FACTORS: DEVELOPMENT AND TESTING OF TWO INSTRUMENTS.** Joyce Pittman, PhD, FNP-BC, CWOCN, Indiana University, Indianapolis, IN; Susan Rawl, PhD, RN, FAAN, Indiana University, Indianapolis, IN; Tamilyn Bakas,

PhD, RN, FAHA, FAAN, Indiana University, Indianapolis, IN; Marsha Ellett, PhD, RN, Indiana University, Indianapolis, IN

**Objective:** To develop and psychometrically test the Ostomy Risk Factor Index (ORFI) and the Ostomy Complication Severity Index (OCSI).

Colorectal cancer is the third most common cancer affecting men and women in the U.S. One in eight individuals diagnosed with rectal cancer will receive a permanent colostomy and many others will need a temporary ostomy. Although this surgery saves lives, more than 70% of patients experience ostomy complications. Few valid, reliable and clinically useful instruments are available to measure risk factors and ostomy complications. The purposes of this study were to: 1) estimate the reliability and validity of the ORFI and OCSI; 2) Identify risk factors that contribute to development of fecal ostomy complications; and 3) describe the incidence and severity of early fecal ostomy complications. Ostomy Complication Conceptual Framework. A prospective, longitudinal study was conducted with 71 adults who received fecal ostomies. Data were collected prior to discharge and 30-60 days post-operatively. Continuous measures were summarized using means and standard deviations and compared using ANOVA. Categorical measures were summarized by frequencies and percentages and compared using chi-square. Relationships were examined using univariate and multivariate analyses. Psychometric properties of the new instruments were examined using content validity indices, Cohen's coefficient kappa, Pearson correlation coefficients, and intra-class correlations. The ORFI demonstrated acceptable content validity (CVI= 0.9), acceptable inter-rater reliability for 10 of 14 items ( $k = 1.0$ ), and excellent intra-class correlation ( $r = .998$ ,  $p = .001$ ). The OCSI demonstrated acceptable content validity (CVI= 0.9), acceptable inter-rater reliability for all items ( $k = .71 - 1.0$ ), and excellent intraclass correlation ( $r = .991$ ,  $p = .000$ ). More than 80% of participants experienced ostomy complications. Stoma/abdomen characteristics ( $p = .007$ ) and BMI ( $p = .002$ ) predicted ostomy complication scores,  $F(5, 53) = 4.76$ ,  $P = .001$ . Ostomy complications and ostomy adjustment were inversely related ( $r = -0.27$ ,  $p = .04$ ) while stoma care self-efficacy and ostomy adjustment were positively correlated ( $r = .599$ ,  $p = .01$ ). This study provides support for the validity and reliability of two new instruments designed to identify risk factors and ostomy complications. Findings have implications for nursing care and quality of life for patients adjusting to living with a new ostomy.

1418049

**PERSISTENT SYMPTOMS IN OLDER BREAST CANCER SURVIVORS.** Lanell Bellury, PhD, RN, AOCNS®, Mercer University, Atlanta, GA; Kevin Stein, PhD, American Cancer Society, Atlanta, GA; Lee Ellington, PhD, University of Utah, Salt Lake City, UT

**Underwriting/Funding Source:** Doctoral Scholarship in Cancer Nursing DSCNR-07-220-03 from the American Cancer Society

**Objective:** Describe the most common and persistent symptoms experienced by older breast cancer survivors.

Multiple cohort studies have demonstrated that breast cancer survivors report more symptoms compared to age-related peers. Comparison of symptom reports from 2, 5 and 10 year survivors is unknown. The need to define appropriate care for the growing number of older survivors requires an understanding of potential long term and late effects of cancer. The majority of the 13.8 million cancer survivors in the US are older than 65 years. Ongoing symptoms are closely associated with decreased function. The purpose of this presentation is to examine the symptom reports from a national population based study and compare groups of 2, 5, and 10 year survivors. A published conceptual model of older cancer survivorship combining personal,



cancer, and aging components considers symptoms an intermediate outcome variable directly influencing health outcomes. Prior path analysis supported this framework. A secondary data analysis of the American Cancer Society Study of Cancer Survivors II was conducted on a subset of older breast cancer survivors (n=896). Symptoms were measured by the Modified Rotterdam Symptom Checklist, a 30-item list of symptoms and a 4-point Likert evaluation of the extent of bother. Number of symptoms, symptom bother, and the prevalence of individual symptoms were calculated. Acceptable convergent and divergent reliability and internal consistency have been demonstrated. Descriptive analyses were conducted based on level of measurement. Comparison between lengths of survivorship cohort were examined using ANOVA or Chi Square. Symptoms reported as causing significant bother by more than 5% of participants included decreased sexual interest (21.1%), low back pain (8.6%), difficulty controlling urine (7.2%), pain (6.5%), tiredness (6.1%), and lack of energy (5.7%). Symptoms reported as causing no bother by more than 80% were vomiting (97.6%), sore mouth (92.3%), nausea (90.8%), shivering (86.3%), diarrhea (82.8%), and weight loss (81.4%). Symptom prevalence, symptoms reported as causing minimal and moderate bother, and differences in individual symptoms will be reported. The Modified Rotterdam, an excellent tool for cancer symptom reports during cancer treatment, includes many symptoms that do not appear to be prominent in post treatment survivorship. The development of survivor-specific measures is needed.

#### 1418150

### PHYSICAL ACTIVITY, AND PHYSICAL AND MENTAL HEALTH AMONG SURVIVORS: THE BREAST CANCER COLLABORATIVE REGISTRY STUDY.

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**Objective:** To examine the baseline physical activity level, physical and mental health functioning and associated relationships among these variables in women enrolled in the BCCR.

Breast cancer survivors report decreased activity levels, with lower physical and mental health as compared to the general population. Surgical intervention and adjuvant therapies for breast cancer predispose women to inactivity and to declines in physical and mental health. An innovative, multicenter, web-based, Breast Cancer Collaborative Registry (BCCR) comprehensive questionnaire was used for this study to identify long-term breast cancer survivorship issues on which to base interventions to reduce breast cancer treatment effects. The purpose of this study was to examine the baseline physical activity level, physical and mental health functioning and associated relationships among these variables in women enrolled in the BCCR. A theoretical framework of health-related quality of life guided this study. 606 women receiving treatment for breast cancer were enrolled into the BCCR at several cancer institutions. Data were collected in a baseline questionnaire upon enrollment. Physical activity level was captured in one instrument-based question (n =400). Data regarding physical and mental health, and associated component scores were calculated using the SF-36v2. Descriptive statistics, correlations, and ANOVA were used for data analysis. Mean age = 58.6 years (SD = 11.9); time since diagnosis was 2.5 (SD = 5.1) years. Mean scores and standard deviations were 45.8 (SD 10.7) for physical functioning; 47.1 (10.9) social functioning; 48.1 (10.9) role emotional; and 47.6 (10.3) for bodily pain denoting significantly lower score as compared to female population norms. Younger age, partnered relationships, being physically active, and higher educational levels are significantly associated with better physical functioning. ANOVAs

revealed those with a baccalaureate degree have significantly better physical functioning as compared to women with a high school diploma or less education. Being fully physically active was significantly correlated with increased physical and mental functioning. Breast cancer survivors report decrements in physical and mental health that are well below population norms and persist well beyond cancer treatment. Interventions to improve physical functioning are needed that specifically target older, less educated women and that support keeping all survivors fully active through and following treatment.

#### 1418411

### IMPACT OF NEUROPSYCHOLOGICAL (NP) DYSFUNCTION FROM BRAIN TUMORS ON WORK PRODUCTIVITY.

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**Underwriting/Funding Source:** NIH R01NR011044

**Objective:** Learner will describe the impact of NP dysfunction on work limitations in persons with a brain tumor.

Treatment for primary brain tumors (PBTs) has advanced, yet many survivors have NP dysfunction both pre- and post-operatively. NP dysfunction can interfere with work performance, yet the degree of interference has not been determined. The purpose of this analysis was to evaluate the impact of NP dysfunction on work productivity in persons with a PBT. Virginia Henderson's Need Theory. From a prospective longitudinal study (R01NR011044), 46 adults newly diagnosed with a PBT undergoing endonasal approach for tumor resection were recruited from neurosurgery clinics. Research assistants collected data preoperatively: learning and memory (Digit Symbol Coding Test, Auditory Verbal Learning Test, Rey-Osterrieth Figure Test, Wechsler Memory Scale III); visuo-spatial ability (Rey Complex Figure Test copy); attention (Trails A); mental flexibility (Trails B); executive function (Stroop); language (Controlled Oral Word Association); psycho-motor speed (Grooved Peg Board). The Center for Epidemiological Studies-Depression scale and Profile of Mood States-Short-Form were utilized. Work productivity was assessed using the Work Limitations Questionnaire. All measures have well-established reliability and validity. Univariate analyses identified potential predictors of work limitations; variables with  $p < .10$  were analyzed using multi-variable regression analyses. Lower learning and memory scores (LM) and higher depressive symptoms (DS) were significantly associated with poor time management at work (LM:  $\beta = -.59$ ,  $p = .01$ ; DS:  $\beta = 3.42$ ,  $p < .01$ ;  $R^2 = .54$ ), difficulty meeting mental-interpersonal work demands (LM:  $\beta = -3.39$ ,  $p = .04$ ; DS:  $\beta = 3.25$ ,  $p < .01$ ;  $R^2 = .47$ ), and overall health related loss of work productivity (LM:  $\beta = -0.72$ ,  $p = .05$ ; DS:  $\beta = 0.659$ ,  $p < .01$ ;  $R^2 = .43$ ). Visuospatial dysfunction ( $\beta = -3.30$ ,  $p = .05$ ) and higher depressive symptoms ( $\beta = 2.29$ ,  $p < .01$ ) were significantly associated with difficulty completing physical work demands ( $R^2 = .29$ ). Future research should examine NP dysfunction, depressive symptoms, and work productivity across the care trajectory, including treatment and survivorship. Clinically, interventions for depressive symptoms and LM dysfunction may improve work functioning and assist patients to remain in their occupational roles.

#### 1418426

### SYMPTOMS AND TREATMENT OF CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY AMONG COLORECTAL CANCER SURVIVORS WHO RECEIVED OXALIPLATIN.



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**Underwriting/Funding Source:** University of South Florida College of Nursing Faculty in Pilot Research Award

**Objective:** To inform oncology nurses about symptoms of neuropathy that occur among patients treated with oxaliplatin, and the medications patients utilize for treatment.

Among the approximately 100,000 persons diagnosed with colon cancer each year, 60% will be candidates to receive oxaliplatin based chemotherapy. At least 48% of patients who receive oxaliplatin develop chronic peripheral neuropathy (PN) during treatment; others develop PN soon after cessation of treatment that may become permanent. Few evidence-based interventions exist for PN in this population and the pharmacological treatments of PN have untoward side effects, such as somnolence, that may keep patients from taking as prescribed. The purpose of this study was to evaluate the characteristics and describe treatment of neuropathy in colorectal cancer survivors previously treated with oxaliplatin. Neurotoxic chemotherapeutic agents cause sensorimotor neuropathy by inducing mitochondrial dysfunction. This was a cross-sectional descriptive study involving 111 colorectal cancer survivors treated with oxaliplatin between 2003-2009 who completed a mailed survey. Painful neuropathy symptoms were measured using the Chemotherapy Induced Peripheral Neuropathy Assessment Tool, and medications were self-reported. Data were analyzed using descriptive statistics. The mean age of participants was 60.9 years and chemotherapy was initiated 2.96 years prior to data collection, on average. Numbness and/or tingling in the feet (70.3%) and hands (64%) were the most frequently reported symptoms followed by cold sensitivity (55.9%) and discomfort in the feet (47.7%). Non-steroidal anti-inflammatories were the most frequently reported medications used for treatment (14.4%) followed by opioids (12.6%), antidepressants (10.8%), anticonvulsants (8.1%), B Vitamins (8.1%), and magnesium (7.2%). Analysis of additional comments regarding medications for neuropathy indicated that some patients have trouble tolerating anticonvulsants such as pregabalin and gabapentin and are doubtful of their efficacy. It is clear that neuropathy remains a significant problem for colorectal cancer survivors. Patients are using a variety of nutritional supplements to self-treat neuropathy, the majority with limited scientific evidence to support. Clear communication between patients and providers regarding tolerability of anticonvulsants and preferences for treatment are imperative. Researchers should continue to explore more effective and tolerable methods to treat neuropathy.

#### 1418496

**PAIN CARE QUALITY AND OUTCOMES IN U.S. INPATIENT ONCOLOGY UNITS.** Jeannine Brant, PhD, APRN, AOCN®, Billings Clinic, Billings, MT; Catima Potter, MPH, Kansas University Medical Center, Kansas City, KS; Susan Tavernier, PhD, APRN-CNS, AOCN®, University of Utah, Salt Lake City, UT; Susan Beck, PhD, APRN, AOCN®, FAAN, University of Utah, Salt Lake City, UT

**Underwriting/Funding Source:** Robert Wood Johnson Foundation

**Objective:** To describe the pain experience of patients with cancer who are hospitalized on U.S. inpatient oncology units.

Pain is a distressing and prevalent problem in patients with cancer, but little is known about the pain experience of hospitalized cancer patients. The purpose of this study was to examine pain care in U.S. hospitals through dissemination of quality indicators via the National Database of Nursing Quality Indicators® (NDNQI)—a national consortium that collects and reports unit level nursing quality indicators. This study reports

data from a subset of inpatient oncology units. The objective was to characterize pain and care quality and examine relationships between unit-level variables, pain care quality, and patient outcomes. The Quality Health Outcomes Model posits linkages between unit-based variables, pain care quality, and patient outcomes. Pain care indicators were disseminated through NDNQI in 326 U.S. hospitals on 1611 nursing units; 114 were oncology units. Patients (n=810) rated pain on average on a “0-10” scale, time in severe pain, and percentage of pain relief with the current treatment plan. Six indicators were rated by patients using a “1” (strongly disagree) to “6” (strongly agree) scale. Data were analyzed with summary statistics and correlations of unit level data. The mean pain score was 5.87 (SD 1.3), and 25% of patients reported being in frequent (>50% of the time) or constant severe pain. “My nurse believed my reports about my pain” was rated highest (mean 5.68, SD .34), the nurse suggesting non-pharmacologic approaches to manage pain was rated lowest (mean 4.03, SD1.07). Of units reporting certification data (n=58) a relationship was found between units with more certified RNs and the nurse believing the patient’s report of pain (r=0.3, p=.02). More nursing care hours per patient day (n=104 units reporting) correlated to lower pain intensity scores (r=-.2, p=.03) and nurses being more likely to suggest nonpharmacologic options (r=.3, p=.01) and discuss pain medication side effects (r=.3, p=.002). Pain is a significant problem on inpatient oncology units with one-quarter of patients reporting frequent or constant severe pain. Data partially supports the theoretical framework, suggesting that RN certification and higher nursing care hours per patient day contribute to certain aspects of pain care quality.

#### 1418510

**RANDOMIZED CLINICAL TRIAL OF COGNITIVE TRAINING FOR BREAST CANCER SURVIVORS.** Diane Von Ah, PhD, RN, Indiana University, Indianapolis, IN; Janet S. Carpenter, PhD, RN, FAAN, Indiana University, Indianapolis, IN; Andrew Saykin, PsyD, Indiana University, Indianapolis, IN; Michael Weaver, PhD, RN, FAAN, Indiana University, Indianapolis, IN; Fredrick Unverzagt, PhD, Indiana University, Indianapolis, IN

**Underwriting/Funding Source:** Robert Wood Johnson Foundation

**Objective:** The goal of this study was to evaluate the preliminary efficacy of cognitive training for breast cancer survivors (BCS) suffering from cancer- and cancer-treatment-related cognitive impairment.

Up to 75% of the 2.6 million BCS living in the United States report some degree of cognitive impairment. Cognitive impairment in BCS is a prevalent, severe, and persistent problem that is associated with other symptoms and poorer health-related quality of life. The scientific basis for managing cognitive impairment in cancer survivors is extremely limited and no guidelines exist to effectively treat this potentially debilitating symptom. The purpose of this study was to evaluate the preliminary efficacy and satisfaction/acceptability of memory or speed of processing training versus waitlist control for improving cognitive function in BCS. Cognitive training was based on the principles of neuroplasticity, or experienced based change, which is the brain’s ability to reorganize, form new neural connections and improve cognitive performance. A total of 82 eligible BCS were randomized to memory training (n=26), speed of processing training (n=27), or wait-list control (n=29). Participants assigned to training completed ten 1-hour sessions in groups of 3-5 people delivered over 5-7 weeks. Primary outcomes were objective neuropsychological tests of memory and processing speed. Secondary outcomes were perceived cognitive functioning, associated symptoms (depressive symptoms, anxiety, and fatigue), quality of life and intervention satisfaction/accept-

ability. Data were collected at baseline, post-intervention and 2-month follow-up. Using repeated-measures mixed-linear ANCOVA models, each intervention was compared to wait-list control. Memory training improved memory performance at 2-months ( $d = 0.59$ ). Speed of processing training improved processing speed post ( $d = 0.55$ ) and 2-months ( $d = 0.67$ ) and memory performance post ( $d = 0.75$ ) and 2-months ( $d = 0.82$ ). Both interventions were associated with improvements in perceived cognitive functioning, associated symptoms, and quality of life. Ratings of satisfaction/acceptability were also high for both interventions. This was the largest randomized controlled trial examining cognitive training in BCS to-date and findings indicate that while both interventions appeared promising, speed of processing training may have broader benefits in this clinical population.

#### 1418528

**LONGITUDINAL SYMPTOM BURDEN IN PATIENTS WITH CHRONIC MYELOID LEUKEMIA.** Loretta A. Williams, PhD, RN, AOCN®, University of Texas MD Anderson Cancer Center, Houston, TX; Patricia Ault, MSN, RN, University of Texas MD Anderson Cancer Center, Houston, TX; Araceli Garcia-Gonzalez, MD, CCRP, University of Texas MD Anderson Cancer Center, Houston, TX; Mary L. Sailors, PhD, University of Texas MD Anderson Cancer Center, Houston, TX; Charles S. Cleeland, PhD, University of Texas MD Anderson Cancer Center, Houston, TX; Jorge E. Cortes, MD, University of Texas MD Anderson Cancer Center, Houston, TX

**Underwriting/Funding Source:** Novartis Pharmaceuticals

**Objective:** The objective of this study is to describe the symptom burden of CML over 1 year.

Patients with Philadelphia chromosome-positive chronic myeloid leukemia (CML) receive tyrosine kinase inhibitor (TKI) therapy to manage their disease. However, patients with CML may report symptoms that interfere with daily activities. This study addresses the 2009-2013 ONS Research Agenda content area of cancer symptoms and side effects. Lack of symptom recognition may result in failure to address symptoms, maximize patient functioning, and support treatment adherence. Oncology nurses assist patients to cope with symptoms, but information about the symptom burden of CML is scarce. The purpose of this study is to delineate the symptom burden of CML and identify factors associated with increased symptom burden. The theoretical framework for this study is symptom burden. Symptom burden is the combined impact of symptoms from disease and treatment on daily functioning. In this longitudinal, descriptive study, 160 patients with CML rated the severity of 20 symptoms and 6 areas of symptom interference on 0-to-10 scales (0 = not present/no interference; 10 = as bad as can be imagined/complete interference) every 2 weeks for 1 year using the M. D. Anderson Symptom Inventory for CML (MDASI-CML), a valid and reliable measure of symptom burden in CML. Information on patient characteristics and quality of life was collected at study entry and completion. The symptom burden of CML and associated factors was determined using descriptive statistics, t-tests, group-based trajectory, and logistic regression modeling. 156 participants completed at least 2 assessments. Average age was 51.1 years (standard deviation [sd]=13.5), 54% were female, 74% were non-Hispanic whites, and 94% were receiving TKIs. The five most severe symptoms were fatigue (mean=2.67, sd=2.39), drowsiness (mean=2.1, sd=2.24), muscle soreness (mean=2.08, sd=2.39), disturbed sleep (mean=2.03, sd=2.39), and trouble remembering (mean=1.7, sd=1.92). The composite mean of these symptoms was 2.12 (sd=1.84), while the interference composite mean was 1.48 (sd=1.80). 32% of participants comprised a high symptom group (5 most severe

symptoms composite mean=4.28, sd=1.24 versus composite mean=1.24, sd=0.76); 44% of participants comprised a high interference group (mean=3.09, sd=1.60 versus mean=0.50, sd=0.44). Living alone and not working were significantly associated with high symptom group membership ( $P=0.047$  and  $P=0.01$  respectively). A subgroup of patients with CML experience high symptom burden. These patients need to be identified clinically, and research is needed to establish an evidence base for managing these symptoms.

#### 1418547

**DIFFUSION OF THE DISTRESS MANAGEMENT GUIDELINE INTO PRACTICE.** Susan S. Tavernier, PhD, APRN-CNS, AOCN®, University of Utah, Salt Lake City, UT; Susan L. Beck, PhD, APRN, AOCN®, FAAN, University of Utah, Salt Lake City, UT; William N. Dudley, PhD, Piedmont Research Strategies, Inc., Summerfield, NC

**Underwriting/Funding Source:** ONS Foundation through an unrestricted grant from Sanofi-Aventis, U.S.

**Objective:** The participant will be able to describe the characteristics of adoption, barriers to adoption and predictors of adoption by oncology nurses of the National Comprehensive Cancer Network Distress Management Guideline into routine outpatient oncology practice.

Cancer-related distress is a nurse-sensitive outcome occurring at significant levels in up to 50% of patients. Adequate screening and management can improve other outcomes (i.e. treatment adherence, depression, quality of life). Despite comprehensive reviews and guidelines, distress continues to be under-assessed in people with cancer resulting in sub-optimal patient outcomes. The purpose of this study was to assess oncology nurse awareness and adoption of the National Comprehensive Cancer Network (NCCN) Distress Management Guideline (DMG) and examine relationships between organizational and clinician characteristics and adoption practices. Rogers' Diffusion of Innovation theory guided our examination of clinician and organizational barriers to DMG adoption. This was a descriptive, correlational study. A 60 item survey was sent electronically or via postal mail to 1847 randomly selected eligible Oncology Nursing Society (ONS) members. Binary logistic regression with use or nonuse of the DMG as the outcome variable was employed to examine the value of a set of 12 predictors. The response rate was 22.8% with a total of 409 surveys used in the data analysis. The sample varied in education (bachelor prepared = 41%), work setting (urban = 44%, hospital-based = 42%) and nursing role (46% staff nurses). Certified nurse's (84%) were over-represented in comparison to the ONS membership certification rate of 71%. Few nurses were familiar (23%) with or using (17%) the DMG. Predictors of using DMG included: higher familiarity with the guideline (odds ratio 3.81,  $p<.001$ ), lower perceived barriers (odds ratio 0.4,  $p = .001$ ), not-for-profit status (odds ratio 3.93,  $p = .05$ ) and urban or rural sites (odds ratio 0.22,  $p = .04$ ; overall model chi square 133.25, df 12,  $p<.001$ , Nagelkerke  $R^2 .67$ ). The presentation will include the complete report of all variables in the model as well as a report of an examination of several statistical interactions and implications for future research. Nurse adoption of the NCCN Distress Management Guideline in the outpatient setting may be expanded by increasing awareness and reducing perceived barriers. Intervention studies to reduce barriers, particularly in for-profit and sub-urban sites (low adopters) are warranted.

#### 1418660

**CANCER THERAPY AND CARDIOTOXICITY: SUCCESSFUL MANAGEMENT THROUGH CARDIONCOLOGY**



**COLLABORATIVE PRACTICE.** Anecita P. Fadol, PhD, RN, FNP, FAANP, MD Anderson Cancer Center, Houston, TX

**Underwriting/Funding Source:** ONS Foundation Fellowship Award through an unrestricted grant from Genentech BioOncology

**Objective:** To discuss the importance of collaborative practice between cardiology and oncology services in the management of heart failure as a complication of cancer therapy.

Heart failure (HF) is a dreaded complication that can result from the cardiotoxic effects of various antineoplastic agents. Successful management requires a close collaboration between cardiology and oncology services. It is imperative for oncology nurses to understand the management of HF associated with cancer therapies to actively participate in collaborative practice. Heart Failure (HF) is a clinical problem of emerging importance because of the advances in cancer detection and treatment that resulted in increased cancer survivorship, and hence the increasing likelihood that cancer treatment induced HF can develop. The oncology literature indicate that more than 50% of all patients exposed to an anthracycline will show some degree of cardiac dysfunction acutely or 10 to 20 years after treatment, and 5% of those patients will develop overt HF. The purpose of this presentation is to discuss how the "Heart Success Program (HSP)" a cardioncology collaborative practice resulted in clinical and cost effective care. The Heart Success Program (HSP) includes comprehensive education of patients, families, and the cardioncology team regarding heart failure and cancer management. The HSP tools include development of a HF order set, patient education booklet, educational videotape specific for patients with cancer and HF, and a patient diary. Weekly interdisciplinary clinical rounds provide a forum for discussion of identified patient's problems and formulate solutions. Endpoint outcomes include compliance with the Center for Medicare and Medicaid Services (CMS) core measures for HF. Oncology nurses were the key component in the implementation of the HSP. With the implementation of the HSP, hospital length of stay was decreased from 10.1 to 5.8 days, and inpatients average charge for admission decreased by 60%. Despite the presence multiple co morbid conditions, patients were discharged from the hospital with improved functional status and recommended HF medications. Data from this quality improvement activity demonstrated that a cardioncology collaborative approach have a significant impact in clinical and cost outcomes for patients with cancer and HF. It is this team approach that provided support to patients and their families and allowed for patients to continue their cancer treatment resulting in improved outcomes.

#### 1418916

**PAIN IN THE HOME HOSPICE SETTING: A VIEW FROM THE INSIDE.** Lee A. Jarrett, RN, Vanderbilt University, Nashville, TN; Bethany Andrews, RN, MSN, ACNP-BC, Vanderbilt University, Nashville, TN; Sheila Ridner, PhD, RN, ACNP, Vanderbilt University, Nashville, TN; Nancy Wells, DNSc, RN, FAAN, Vanderbilt University, Nashville, TN; Barbara Murphy, MD, Vanderbilt University, Nashville, TN

**Underwriting/Funding Source:** Hospice pain control: Developing an opioid order sheet. Barbara Murphy, MD, principal investigator Funded by NCI 9-05 (R21 CA 115388-01)

**Objective:** The objective is to describe oncology patients, family caregivers, and physician conceptualizations of pain in a home hospice setting.

In the United States, almost 50% of patients diagnosed with cancer will eventually die and 70-80% of terminal oncology patients will report pain during this process. The majority of cancer patients with terminal disease are referred to hospice where pain

control can be a major problem. The purpose of this study was to explore patient, caregiver, and physician perceptions of pain assessment and management in home hospice. The "Model of Critical Steps for Adequate Pain Outcome" was used as a conceptual framework. This framework centers pain control around the interaction and communication between physician and patient with both parties bearing some responsibility for the adequate management of pain outcomes. This study sought to extend this model to include caregivers who eventually become a proxy for reporting patient pain in the home hospice setting. This is a cross-sectional, qualitative study of advanced cancer patients (N=20), caregivers (N=11), and physicians (N=14). Semi-structured interviews were tape recorded and transcribed verbatim. Participants answered questions about personal definitions of pain, pain management, and pain assessment in an outpatient hospice setting. Conventional content analysis with Atlas-ti software was used for data analysis and transcripts were independently reviewed by two researchers. Pain is a unique phenomenon in this setting. Themes: 1) Assessment of Pain—Pain is more than physical discomfort and cannot be accurately assessed on the 0-to-10 scale. Pain is not isolated from mood, other disease symptoms, and medication side effects such as decreased alertness. 2) Management of Pain—The goal of pain control within this population is not to achieve the absence of pain but rather a tolerable level of pain while maintaining the desired functional status. Current tools for pain assessment in outpatient hospice settings are inadequate and inconsistent with patient-defined pain. As patient goals shift near EOL, pain management must shift towards keeping the patient alert and functional. Further research is needed to re-conceptualize how pain is defined and assessed within this population. The traditional 0-to-10 pain scale must be defined in a new way that takes into account the broader symptom burden of terminal oncology patients.

#### 1419225

**MONITORING THE INTEGRITY OF A GUIDELINE-BASED SYMPTOM INTERVENTION ACROSS MULTIPLE NURSE PRACTITIONER INTERVENTIONISTS IN A MULTI-SITE CLINICAL TRIAL.** Meagan Whisenant, RN, MSN, ARNP, University of Utah, Salt Lake City, UT; Debra Wujcik, RN, PhD, AOCN®, FAAN, Vanderbilt University Medical Center, Nashville, TN; Kathi Mooney, RN, PhD, FAAN, University of Utah, Salt Lake City, UT; Susan Beck, PhD, APRN, AOCN®, FAAN, University of Utah, Salt Lake City, UT

**Underwriting/Funding Source:** NCI (R01CA120558)

**Objective:** The participant will be able to identify how electronic medical records may be used to monitor clinical guideline adherence in an intervention study.

To describe our experience monitoring treatment integrity when multiple nurse practitioners (NPs) implemented a guideline-based intervention for patients with chemotherapy-related symptoms across multiple sites using an electronic case management system (CMS). We conducted a multi-site clinical trial of an innovative evidence-based intervention provided by NPs to patients experiencing chemotherapy-related symptoms, with data captured through an automated telephone symptom monitoring system. NPs responded to daily symptom alerts guided by an investigator-developed, electronic CMS using national guidelines for cancer symptom management (NCCN, MASCC, ONS). The NP created a report for each telephone encounter documenting the nature of the intervention via a check-list and narrative. Challenges were presented in monitoring the integrity of intervention delivery across eight NPs. The CMS allowed development of an innovative system to electronically capture data related to NP adherence to multiple components of the clinical practice guidelines. However, it was challenging to identify



which parts of the individual guidelines should apply to all NP-patient encounters; many aspects of guidelines are conditional and tailored using algorithms. Criteria (including inclusion criteria, specific NP actions, and allowable deviances) for the audits related to managing eight symptoms were developed. Symptom-specific data were audited for 489 alerts (range 30 to 65 per symptom) to assess guideline adherence. We used NPs' narratives when uncertain about whether the criteria were met. NPs were given feedback on individual adherence to the guidelines and education to improve intervention integrity. CMS improvements increased the precision of the checklist and auditing process. Repeat audits tracked improvement in adherence and assured ongoing intervention integrity. Electronic systems, when coupled with practice guidelines and well-defined audit parameters, can be effective resources for monitoring intervention integrity in multi-site intervention trials. As electronic systems are increasingly utilized in oncology symptom research and practice, designs should include core measures that reflect specific aspects of practice guidelines. Audit and feedback can improve care and maintain the integrity of intervention studies.

#### 1419341

**A PILOT STUDY OF A NOVEL ENROLLMENT PROCESS FOR A PATIENT-CENTRIC REGISTRY.** Susan R. Mazanec, PhD, RN, AOCN®, Case Western Reserve University, Cleveland, OH, and Case Medical Center, Cleveland, OH; Barbara J. Daly, PhD, RN, FAAN, Case Western Reserve University, Cleveland, OH, and Case Medical Center, Cleveland, OH

**Objective:** To describe a novel, multi-stage consent process for enrolling patients into a registry.

A patient-centric registry links comprehensive patient-oriented information, including biologic, epidemiologic, clinical, and psychosocial data elements from cancer treatment through survivorship. The registry can provide a foundation for comparative effectiveness research by identifying research questions, examining profiles of patients related to a specific characteristic, and providing data elements needed for sophisticated modeling. An initial step in building a registry is overcoming regulatory barriers that entail complex consent procedures and designing efficient data collection procedures, integrated in to clinical practice. The aims of this pilot study were to test a novel, multi-stage consent process for the registry and to evaluate the feasibility of collecting patient-reported outcomes electronically using the NIH-sponsored Patient Reported Outcome Measurement Information System (PROMIS) measures (Computer-Adapted Technology version). The study was guided by the essential principles for informed consent: respect of persons, beneficence, and justice. Additionally, the philosophic perspective that patient-centered data are essential for high-quality comparative effectiveness research also informed the design of the registry. A descriptive, cross-sectional design was used to evaluate initial registry procedures in 21 patients with breast cancer. An IRB-approved registry brochure and simplified one-page, tiered consent form, on which patients indicated their choice for extent of participation, were designed. Patients were sent the brochure as part of their routine information packet prior to initial consultation and a research nurse met with the patient at initial treatment to review the brochure, answer questions, and obtain informed consent. The patient then completed the PROMIS measures of pain, fatigue, physical function, anxiety, and depression, and evaluated the consent process. The analysis consisted of descriptive statistics. The consent rate was 78%. Fifty-seven percent did not read the registry booklet prior to meeting with the nurse underscoring the need for a brief in-person consent discussion during the pre-consultation period. More than 66% agreed to be contacted for future studies, 95% agreed to the use of their genetic information, and more than 75% were

able to administer the PROMIS measures independently. The multi-stage, simplified consent process was feasible and acceptable to patients. Collection of patient-reported outcomes using an electronic tablet was easily integrated into clinical operations.

#### 1419348

**THE QUALITY OF LIFE OF MEN WITH ADVANCED PROSTATE CANCER TREATED WITH ANDROGEN DEPRIVATION THERAPY AND THEIR PARTNERS.** Gail Newth, PhD, NP-BC, University of Michigan, Ann Arbor, MI; Laurel Northouse, PhD, RN, FAAN, University of Michigan, Ann Arbor, MI; Sonia Duffy, PhD, RN, University of Michigan, Ann Arbor, MI; Nancy Janz, PhD, University of Michigan, Ann Arbor, MI; John Wei, MD, University of Michigan, Ann Arbor, MI

**Objective:** The objective of this study was to more thoroughly understand the quality of life (QOL) of advanced prostate cancer patients receiving androgen deprivation therapy (ADT) and their partners.

This study is significant because it address the needs of a vulnerable population, advanced cancer patients and their partners. Advanced prostate cancer patients treated with ADT can experience a large number of physiological and psychological sequelae; however, few studies have examined how these sequelae affect the patients' and their partners' quality of life (QOL). The purposes of this study were to: 1) describe and compare patients' and partners' levels of self-efficacy, symptom distress, communication, appraisal, coping and QOL and 2) determine if specific antecedents factors (self-efficacy, symptom distress, communication, partners' QOL), and mediators (appraisal of illness/caregiving, active and avoidant coping) explain a significant amount of variance in the QOL of advanced prostate cancer patients treated with ADT and their partners. A stress-coping model guided this study. The study was a cross-sectional, secondary analysis of data obtained from two randomized clinical trials. The study sample consisted of 75 patient-partner dyads. Data were obtained using standardized measures with acceptable reliabilities. Independent t tests were used to assess differences between patients and partners scores on major study variables. Bootstrapping was used to assess for mediator effects and structural equation modeling was used to assess the models function to predict QOL. Patients and partners were more alike than different. Partners reported worse emotional QOL than patients. Patients and partners had poorer emotional QOL when compared to a normative sample. Appraisal and avoidant coping were significant mediators between antecedents variables and QOL for patients and partners. Partners' QOL significantly predicted patients' QOL. Patients' QOL was not a significant predictor of partners' QOL. Overall, the stress-coping model accounted for a significant amount of variance in patients' and partners' QOL (89% and 74%, respectively). Findings suggest that advanced prostate cancer patients treated with ADT and their partners are at risk for poorer emotional QOL. This study lays the groundwork for future theory driven QOL research with advanced prostate cancer patients treated with ADT and their partners. Clinicians should assess patients' and partners' emotional QOL and when warranted consider appropriate interventions in the following areas: (i.e. self-efficacy, symptom distress, communication, appraisal, avoidant coping).

#### 1420122

**PATIENT AND CAREGIVER SATISFACTION WITH CANCER SURVIVORSHIP PLANS.** Karyl D. Blaseg, RN, MSN, OCN®, Billings Clinic, Billings, MT; Jeannine Brant, PhD, APRN, AOCN®, Billings Clinic, Billings, MT; Kathryn Aders, RN, BSN, Billings Clinic, Billings, MT; Dona Oliver, RN, MSN, MBA, Billings Clinic, Billings, MT

**Underwriting/Funding Source:** National Cancer Institute's Community Cancer Centers Program

**Objective:** Discuss implementation and patient perceptions of cancer survivorship plans for patients with breast cancer or lymphoma.

Survivorship plans are an integral component of comprehensive cancer care and provide survivors with better ability to manage late- and long-term symptoms and carry out effective surveillance activities. Oncology nurses play a significant role in the development and delivery of survivorship plans. The Institute of Medicine released recommendations to improve quality of care for cancer survivors, including provision of survivorship plans. The purpose of this pilot study was to measure the satisfaction of providing survivorship plans to breast cancer and lymphoma survivors and their caregivers and to determine whether differences in satisfaction were related to demographics or clinical characteristics. Survivorship plans were developed with cancer-related diagnostic and treatment information, therapy effects, surveillance, and wellness strategies and tailored to the needs of the survivor. Patients received an individualized survivorship plan from a survivorship navigator following adjuvant cancer treatment. Patients (n=58) and caregivers (n=37) rated satisfaction with the survivorship plan on a Likert scale from "1" (strongly disagree) to "6" (strongly agree-SA) scale at 1 month following discussion of the plan. Breast cancer and lymphoma survivors completed the pilot study, 90% were female and the majority was Caucasian. Patients lived an average of 65 miles from the cancer center; the greatest distance was 390 miles. Mean patient satisfaction scores ranged from 3.36 to 5.96; mean caregiver satisfaction scores ranged from 1.89 to 5.54. The majority of patients (85% SA) were satisfied with the survivorship plan compared to fewer caregivers (56% SA). Patients reported being less anxious about what to do after cancer treatment (62% SA and 33% moderately agreed-MA); 75% SA or MA that their primary care physician could better manage their needs. Comorbidities correlated to discussing the survivorship plans with their primary care provider ( $r=.3$ ,  $p=.03$ ) and the perception that primary care providers could better manage needs because of the survivorship plans ( $r=.3$ ,  $p=.03$ ). In addition to facilitating communication between patients and providers, survivorship plans empower survivors to manage their ongoing health needs through anticipatory guidance and a clear surveillance plan. Results of the pilot indicate high patient and caregiver satisfaction. Disparity between patient and caregiver satisfaction should be further investigated.

#### 1420156

**SLEEP, PHYSICAL AND MENTAL HEALTH: THE BREAST CANCER COLLABORATIVE REGISTRY STUDY.** Ann M. Berger, PhD, APRN, AOCNS®, FAAN, University of Nebraska Medical Center, Omaha, NE; Constance Visovsky, RN, PhD, ACNP, University of South Florida, Tampa, FL; Melody Hertzog, PhD, University of Nebraska Medical Center, Omaha, NE

**Underwriting/Funding Source:** NIH/NCI CA10595 Expansion of Breast Cancer Resources of Eppley Cancer Center

**Objective:** Our objective was to facilitate rapid and uniform collection of critical information from breast cancer survivors regarding long-term effects of treatment.

More than 2.5 million breast cancer survivors currently reside in the United States. An innovative, multicenter, web-based registry of survivor data was established. As survival rates increase, so does the number who experience long-term side effects and complications of treatment. The purpose was to examine the baseline data on sleep, physical, and mental health functioning

and relationships among them in women enrolled in the Breast Cancer Collaborative Registry (BCCR). A theoretical framework of health-related quality of life guided this study. Data were collected from 606 women receiving treatment for all stages of breast cancer who enrolled in the BCCR at several cancer institutions. All data were from the baseline questionnaire administered upon study enrollment. Sleep (n=400) was measured using the Pittsburgh Sleep Quality Index (PSQI). Physical activity level was captured using one instrument-based question (n=596). Physical (PCS) and mental (MCS) component scores (n=575) were calculated using the SF-36v2. Descriptive statistics, correlations, and ANOVA were used in the analysis. Mean age was 58.6 (SD=11.9) years; time since first diagnosis was 2.5 (SD=5.1) years; mean BMI was 28.5 (SD=6.6). Mean scores and SD were: 6.4(3.6) for PSQI; 46.00(10.7) for PCS; and 50.60(10.3) for MCS. Approximately 1/3 of the sample's PSQI scores reflected good sleep (<5) but 2/3 reflected poor sleep (PSQI  $\geq$  5). More than 1/4 of the sample reported a PSQI  $\geq$  8; a cut-off score reflecting poor sleep in cancer patients. Sleep quality was not correlated with any demographic/medical variables. T-tests showed associations between higher physical activity levels with good sleep quality. ANOVAs revealed that perceived sleep quality varied by educational level; post-test comparisons showed that survivors with some post-secondary education reported poorer sleep than those with a bachelor's degree or high school or less. Good sleep was significantly associated with both higher physical and mental health. The BCCR can assist researchers designing interventions for symptomatic survivors. Interventions that reduce sleep disturbances may enhance physical and mental health in breast cancer survivors.

#### 1420168

**PATIENT SATISFACTION WITH A TECHNOLOGY-AIDED NURSE PRACTITIONER INTERVENTION TO IMPROVE CHEMOTHERAPY-RELATED SYMPTOMS.** Mary E. Egger, MSN, WHNP, Vanderbilt University, Nashville, TN; Bethsaida Camacho, MS, NP, St. Thomas Hospital, Nashville, TN; Tracey L. DeWire, MSN, ACNP-BC, Vanderbilt University, Nashville, TN; Debra Wujcik, RN, PhD, AOCN®, FAAN, Vanderbilt University, Nashville, TN; Susan L. Beck, PhD, APRN, AOCN®, FAAN, University of Utah, Salt Lake City, UT; Kathi Mooney, RN, PhD, FAAN, University of Utah School of Nursing, Salt Lake City, UT

**Underwriting/Funding Source:** NCI (R01CA120558)

**Objective:** To evaluate patient satisfaction with a telephone based reporting system to manage chemotherapy related symptoms.

Patients found the system effective and easy to use. The NP intervention empowered patients to better communicate with their doctor and manage their chemotherapy related symptoms. This system shows promise for patient adoption and improved communication about unrelieved symptoms. Effective management of chemotherapy-related symptoms may be hindered for patients who are at home. Among the reasons are ineffective communication between patients and healthcare providers and patient beliefs about not disturbing providers with their symptom complaints. We conducted a clinical trial of an automated symptom monitoring system with nurse practitioner (NP) follow-up to treat unrelieved symptoms at home. This presentation describes patient use and satisfaction with the system. Framework: A community-based, patient-provider activation framework guided the development of the study. In a clinical trial utilizing the automated telephone-based symptom monitoring system, 336 patients were randomized to usual care (UC; n = 162) or NP telephone care (NP-TC; n = 173). All participants called the system daily to report symptoms.

Treatment group participants also received automated tailored symptom self care messages and NP telephone follow-up for moderate to severe symptoms. An end of study questionnaire for feasibility and satisfaction was completed by 84% of participants (UC; n=137) (NP-TC; n=144). Mann-Whitney tests analyzed group differences. The daily calling adherence rate was identical for both groups, on average completing 87% of calls. Most participants reported the system was easy to use, the orientation was adequate, and they had no difficulty understanding questions. The NP-TC group were much more able to keep track of symptoms (50% vs. 40%;  $p < .01$ ), very much more able to participate in their care (54% vs. 34%;  $p < .01$ ), very much more able to be reminded to call their doctor with concerns (47% vs. 30%;  $p < .01$ ), and very much more able to know what symptoms to talk about with their doctor at the next visit (62% vs. 49%;  $p < .01$ ). The NP-TC group were also very much to quite confident that symptoms discussed with the NP would be passed on to their doctor and the self-care strategies were very helpful.

#### 1420171

**AN RN LED INTERDISCIPLINARY APPROACH TO MINIMIZING HYPERSENSITIVITY REACTIONS FOR FIRST AND SECOND TIME PACLITAXEL AND DOCETAXEL INFUSIONS.** Joy Pakkianathan, RN, MSN, CNS, AOCN®, Cedars Sinai Medical Center, Los Angeles, CA; Liza Azurin, RN, BSN, OCN®, Cedars Sinai Medical Center, Los Angeles, CA; Virginia Ladores, RN, OCN®, Cedars Sinai Medical Center, Los Angeles, CA; Sudra Srikumpol, RN, BSM, OCN®, Cedars Sinai Medical Center, Los Angeles, CA; Leanne Sakamoto, PharmD, Cedars Sinai Medical Center, Los Angeles, CA

**Objective:** Demonstrate improved patient outcomes for high risk infusions in an ambulatory setting utilizing an RN led interdisciplinary approach.

Infusion reactions do happen. Hypersensitivity reactions (HSR) occur less often, but can be a frightening experience for both patient and nurse. A desire to decrease the incidence is a common theme shared by oncology nurses. Hypersensitivity reactions (HSR) occur in many cancer infusion centers. Paclitaxel and Docetaxel rank high for their association with HSR in the literature. Based on experience and literature, our RNs observed that best practices were not consistently followed: (1) Use of oral Dexamethasone a day prior to drug infusion and (2) titrating infusion rate for first 30 minutes for first two cycles. A medical record review was conducted in 2009 of all HSR in first and second cycles of Paclitaxel and Docetaxel. The data gathered included pre-medications given, signs and symptoms, interventions, response to rechallenge, and physicians involved. The 2009 HSR incidence for first and second cycles of Paclitaxel was 9% (of n=98) and Docetaxel was 8% (of n=165). A pre-printed order for Paclitaxel or Docetaxel was created collaboratively with Pharmacy to include best practices. The RNs met with all facility oncologists who agreed to use the revised orders. Implementation began June 2010. After the initial six months, IRB approval was obtained to collect post intervention data and evaluate outcomes on an ongoing basis. Result from June 2010 – Dec 2011 showed Paclitaxel patients (n=147). Post intervention Paclitaxel HSR (n=9, 6%), 6 with no oral Dexamethasone. Docetaxel patients (n=160). Docetaxel HSR (n=6, 3%), 3 with no oral Dexamethasone. Pharmacy quality data indicates a decrease in Docetaxel HSR events in 2009 (21) to 2011 (5) and Paclitaxel HSR events in 2009 (15) to 2011 (4). Incidence of HSR was lower in both groups. Using non parametric Chi-Square tests – there was a non-significant trend ( $p = 0.08$ ) for decline in Docetaxel HSR. There was a suggestion ( $p = 0.09$ ) for dexamethasone administration to be associated with fewer HSR. Quality data from

Pharmacy shows a near 50% reduction in docetaxel and Paclitaxel HSR since the RNs began their project in 2010. Continue to evaluate relationship of titration and premedications to identify if one factor is more significant. Continue to work with physicians on compliance with using revised orders. We will monitor data to confirm stability of findings for these rare, but important patient outcomes.

#### 1420174

**MEN AND WOMEN ARE DIFFERENT: PREDICTORS OF AN INFORMED DECISION ABOUT COLORECTAL CANCER SCREENING.** Kelly Brittain, PhD, RN, Michigan State University, East Lansing, MI; Carol Loveland-Cherry, PhD, RN, FAAN, University of Michigan, Ann Arbor, MI; Laurel Northouse, RN, PhD, FAAN, University of Michigan, Ann Arbor, MI; Cleopatra H. Caldwell, PhD, University of Michigan, Ann Arbor, MI; Jacquelyn Y. Taylor, PhD, PNP-BC, RN, FAAN, Yale University, New Haven, CT

**Underwriting/Funding Source:** The National Institutes of Health/National Institute of Nursing Research through the Ruth L. Kirschstein National Research Service Awards (NRSA), grant number 1F31NR010421 and the Rackham Graduate School at the University of Michigan through the King Chavez Parks Future Faculty Fellowship to Kelly Brittain.

**Objective:** The objective of this study was to examine the gender differences related to correlates of an informed decision among African American men and women.

Oncology nurses and nurses at all practice levels in adult health settings have an opportunity to assess the factors that influence colorectal cancer screening decisions of their patients and their families. Colorectal Cancer (CRC) incidence and mortality are highest among African Americans. Making an informed decision is a critical factor in increasing CRC screening rates. Little is known about factors that influence a CRC screening informed decision among African Americans. The specific aims for this study were: 1) to determine if there are gender differences in cultural identity, family support and influence, colorectal cancer beliefs, and informed decision about colorectal cancer screening between African-American men and women and, 2) to determine how much variance these factors account for in African-American men and women's informed decision about colorectal cancer screening. The Preventive Health Model (PHM) guided the study as the PHM proposes that internal and external factors influence preventive health behaviors and the health behaviors are reflective of a person's self-system. A descriptive cross-sectional design was used for this study. A community-based purposive sample of 129 African Americans 50 years and older was recruited from an urban, Midwestern city. Several instruments with established reliability and validity were used to measure the study variables. For men, collectivism ( $r = .32$ ,  $p = .000$ ) and racial pride ( $r = .38$ ,  $p = .00$ ) were related to a CRC informed decision, but not for women. CRC beliefs were related to CRC screening among men ( $r = .32$ ,  $p = .000$ ) and women ( $r = .25$ ,  $p = .000$ ). Family support was related to CRC beliefs supporting CRC screening among men ( $r = .50$ ,  $p = .000$ ) and women ( $r = .45$ ,  $p = .000$ ). The path analyses fit and misfit indices indicated that the female model fit the data better than the male model, which was a poor fit. This study is innovative as it is one of the few to examine gender differences among African Americans and the factors that influence an informed decision about CRC screening. The results provide preliminary support for gender differences in the factors that influence a CRC screening informed decision and CRC screening decision making models of African American men and women. Additional research is warranted as there is a need for new strategies and interventions to decrease African American CRC disparities.



1420403

**PERCEPTIONS OF SHARED GOVERNANCE AMONG NURSES AT A MIDWESTERN HOSPITAL.** Janine Overcash, PhD, GNP-BC, The Ohio State University Comprehensive Cancer Center, Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH

**Objective:** Shared governance is a model of nursing leadership that drives clinical practice. The objective of this research was to examine how nurses at all levels and in all types of employment positions at a national cancer institute center perceive shared governance.

The significance of this project was to contribute to the science surrounding nursing shared governance literature. As more hospitals around the world consider applying for Magnet certification, information concerning the evaluation of the nursing shared governance model is critical and can lead to model changes if shared governance scores are particularly low. The purpose of this research project was to determine if nursing education, work experience, certification, employment position, setting (inpatient/ambulatory), participation in shared governance, and age were related and predictive of scores on the Index of Professional Nursing Governance (IPNG). The theoretical framework for this project was the Relationship-Based Care Model in that nurses who perceive their voice to be valuable and relevant in decision-making will continue to contribute to enhanced shared governance throughout the agency. This prospective, cross-sectional study included nurses employed in any type of nursing role and with any level of educational preparation. An ANOVA model was employed to identify strength of relationships among the categorical or ordinal variables, and regression models were used for the continuous variables. General linear models were used to identify the variables most predictive of IPNG scores. Of the 98 participants, most (96%) were women, 58% were bachelors prepared, and 80% were staff nurses. The mean IPNG score was 186.5. No significant relationships were found among demographic measures and IPNG Scores. Implications were a reported role in shared governance, when combined with work setting (inpatient or ambulatory) was predictive of IPNG scores. Nurses who worked in the inpatient setting reported higher mean IPNG scores. Perhaps increasing the number of nurses who assume a role on the shared governance councils may result in increased total IPNG scores, which would indicate a more equally shared governance situation among staff nurses, management, and administration.

1420459

**EFFECT OF REIKI ON PAIN AND ANXIETY: A SYSTEMATIC REVIEW.** Susan Thrane, RN, MSN, OCN®, University of Pittsburgh, Pittsburgh, PA

**Underwriting/Funding Source:** NINR (TNR011972A)

**Objective:** After reviewing this presentation, learners will be able to describe an optimal study design for Reiki research and explain why standardized protocols are important for future comparisons.

Of the approximately 11.4 million cancer survivors in the U.S., 30% suffer significant pain while 75% of patients with advanced cancer have pain. Anxiety frequently accompanies cancer pain. Moreover, anxiety can exacerbate the pain experienced by patients with cancer. Reiki is a form of biofield energy which originated in Japan in the 1920's wherein the practitioner is a conduit, guiding the energy to the recipient in order to facilitate healing. A growing number of hospitals offer Reiki to patients for relaxation and symptom management. The purpose of this review is to examine randomized clinical trials that tested

Reiki as an intervention for the management of pain or anxiety and to determine, based on current evidence, the effect of Reiki on pain and anxiety in adults. The methodology suggested in Whittemore and Knafl was used to guide this review. A systematic search was conducted using PubMed, ProQuest, Cochrane, PsychInfo, CINAHL, Web of Science, Global Health, and Medline databases using the keywords pain, anxiety, and Reiki. Inclusion criteria covered: (a) use of Reiki as at least one arm of the study, (b) randomization with a control or usual care group, (c) published in peer-reviewed journal, (d) measured either pain or anxiety, (e) published 2000 or later, and (e) published in English. After removing duplicates, 51 abstracts were examined against inclusion criteria. Fourteen articles met inclusion criteria. After full text review, seven articles constituted the review sample. The seven studies included a total of 328 participants (48% female, mean age 63 years). Studies involving cancer patients found decreases in pain and anxiety. Cohen's d calculations show a medium to large effect size for reduction in pain and anxiety although study design flaws and small sample sizes have likely inflated effect sizes. Suggestions for future research include a three group randomized crossover design using Reiki, sham Reiki, and control. Standardized protocols for Reiki treatments including timing and hand positions combined with rigorous study design and execution may result in a more rigorous outcome when examining Reiki.

1420473

**USING TECHNOLOGY TO ASSIST IN POST PAIN MEDICATION ASSESSMENT DOCUMENTATION.** Joanne Abbot, BSN, Roswell Park Cancer Institute, Orchard Park, NY

**Objective:** Participants will be able to list the benefits of implementing a post pain medication score documentation (PPMSD) reminder in the electronic medication administration record (e-MAR).

Oncology nurses focus on providing patient-centered holistic care. Uncontrolled pain is a fear many cancer patients and their loved ones express. Pain control is a quality of life factor and a priority for oncology nurses. Pre and post pain medication assessment requirements are understood and valued by oncology nurses. Through pain scores nurses understand the effectiveness of pain medication. However, nursing care of the oncology patient is complex with many competing demands on the nurse. This can result in documentation that is incomplete. During documentation reviews, missing PPMSD was consistently observed. During conversation with staff nurses it became apparent that effectiveness of pain medication was assessed but PPMSD was incomplete due to role strain and interruption during documentation. In response, we collaborated with our electronic medical record (EMR) team to design a prompt. When a pain medication is documented on the e-MAR a task is generated through a medical logic module. A task appears on the e-MAR reminding nurses to enter the PPMSD. The nurse marks the task on the e-MAR and documents the pain score on the nursing assessment flow sheet through a link in the EMR. If this task is not marked as done the task turns over-due and turns red. Overdue task reports are available for the nurse administrator to review electronically and are automatically printed on the nursing unit at the end of each shift as a final reminder. Improved PPMSD allows the nurse to review the patient's response to pain medication throughout their hospitalization. Non-compliance of PPMSD was due to uncontrollable task interruption and was unintentional by the nurse. A reminder in the EMR was identified as a potential solution. Complete documentation of pain scores allows for pain medication effectiveness to be reviewed and monitored by all patient care providers. This can be reviewed in real time or over a period of time to ensure that the prescribed pain medication remains effective.

1420484

**DECREASING POSTOPERATIVE COMPLICATIONS WITH AN ARGENINE BASED NUTRITIONAL SUPPLEMENT.**

Colleen O'Leary, MSN, RN, AOCNS®, The Ohio State University Comprehensive Cancer Center Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH; Ann Onofri, CNP, The Ohio State University Comprehensive Cancer Center Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH; Jody Knisley, MS, RN, CCRN, CNP, The Ohio State University Comprehensive Cancer Center Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH

**Objective:** To determine if early supplementation with an arginine based supplement will improve patient outcomes and decrease length of stay in patients with head and neck cancer (HNC).

Patients with HNC have a high incidence of postoperative complications. The increased risk of infection associated with surgery can be reduced by proper supplementation. The results of more than 50 studies demonstrate that early feeding of arginine based supplements improved patient outcomes by significantly reducing the risk of infections and shortening hospital stays. Patients with HNC often have poor nutritional status due to the nature of their disease. This puts them at an increased risk for postoperative complications including increased length of stay, infection, fistula and longer healing times. Improving their nutritional status can decrease complications. Nurses will assess the nutritional status of patients with head and neck cancer at their preoperative clinic visit. Those deemed to have poor nutritional status, based on an evidence based risk assessment tool, will be prescribed an arginine based supplement. If the patient has < 10% loss of usual body weight preoperatively, they will consume 3 (8 fl oz.) supplements per day for 5 days preoperatively. Those with > 10% loss of usual body weight preoperatively will consume the same amount preoperatively and an additional 3 (8 fl oz.) supplements per day for at least 5 days postoperatively. A similar arginine based parenteral feeding will be used for those patients who are unable to take enteral nutrition postoperatively. Prior to beginning the project, baseline data is being gathered to determine length of stay, infection rates, fistula formation and healing time in those patients who are deemed to have poor nutritional status. Once the project begins, the same will be measured in all patients who are prescribed the supplementation. Although this project is in the beginning phases, it is suspected, based on current evidence, that patient outcomes will improve with the use of this arginine based supplementation.

1420487

**PROMOTING QUALITY CANCER CARE: PSYCHOSOCIAL DISTRESS SCREENING IN A BREAST CENTER.**

M. Tish Knobf, PhD, Yale University, New Haven, CT, and Smilow Cancer Hospital at Yale New Haven, New Haven, CT; Maureen Major-Campos, RN, MS, Smilow Cancer Hospital at Yale New Haven, New Haven, CT; Anees Chagpar, MD, MSc, MA, MPH, Smilow Cancer Hospital at Yale New Haven, New Haven, CT; Ruth McCorkle, PhD, RN, FAAN, Yale University, New Haven, CT; Andrea Seigerman, LCSW, Smilow Cancer Hospital at Yale New Haven, New Haven, CT

**Objective:** To describe the feasibility of psychosocial distress screening in clinical practice.

In 2012, the Commission on Cancer identified psychosocial distress screening with referral for psychosocial care as an expected standard of practice. The purpose of this quality initiative was to evaluate the feasibility of implementing psychosocial distress screening by structure (personnel to give the form

to patients), process (number of forms reviewed), and outcomes (number of referrals to social work for scores > 4). From a Breast Cancer Center, two groups of patients were selected. All patients new to surgical oncology were given the NCCN distress thermometer (DT) and problem check list by a receptionist over a 2 month period (7/11-8/11). Distress was rated from 0 (none) to 10 (high distress). The form was reviewed by the nursing assistant (NA) and placed on the patient's chart to be reviewed by the practice nurse and surgeon. In medical oncology, two clinic sessions were chosen (12/11) to evaluate the screening. NAs gave the form to the patient and nurses reviewed the completed form. Women with a score > 4 were to be referred to a social worker. In surgical oncology, 88 women completed the screening and reported high distress with an average score of 5.7. Uncertainty of a malignant diagnosis was related to the high distress levels. Thirty-one women (35%) with distress scores >4 and were seen by a social worker. In medical oncology, 22 women completed the screening and the average distress score was 3.9 (range 0-8). Women were Stage I-III (N=17), Stage IV (N=3) or were at high risk receiving chemo-prevention (N=2). Of the 22 women, 12 (54%) had scores > 4 and 5 women (41.6%) were referred to the social worker. Emotional and physical problems were the most common, reported by 77% of the patients. The distress level of women in the surgical oncology group who received a benign diagnosis resolved. It was concluded that distress screening should target women diagnosed with breast cancer. Distress varies by type of problem and standards need to be developed for triaging patients for further evaluation to the appropriate provider for specific emotional and physical problems.

1420558

**BREAST CANCER LYMPHEDEMA RISK MINIMIZATION.**

Anne E. Belcher, PhD, RN, AOCN®, Johns Hopkins University Baltimore, MD; Judy Phillips, FNP-C, MSN, AOCN®, Mission Hospital, Asheville, NC

**Objective:** To increase lymphedema risk minimization among newly diagnosed breast cancer patients

Lymphedema is often discussed with patients at the time of diagnosis but its importance to them is not fully understood in the context of treatment decisions to be made. The nurse is positioned to provide the patient with risk minimization information in the form of a risk assessment survey and an evidence-based brochure "Taking care of myself to decrease the risk of lymphedema". The rationale for the project came from evidence-based literature that indicated that healthcare providers, including nurses, often provide little information to patients about their risk for lymphedema and useful risk-reduction strategies. The purposes of the project were to (a) improve nurses' knowledge of evidence based lymphedema prevention; (b) improve breast cancer patients' knowledge of and use of self-care strategies to prevent lymphedema; (c) provide the patient with an individual risk assessment for lymphedema; and (d) offer a lymphedema educational booklet to patients for future reference. The project was implemented over a 16 week period; the focus of the first four weeks was on nurse education regarding lymphedema, risk assessment, and risk reduction strategies. Patients were then recruited for initial evaluation of their knowledge, bilateral hand and arm circumferences, review of the risk minimization booklet, completion of the risk assessment tool, and discussion of risk and risk reduction with the educated nurse. Nurses' knowledge of lymphedema and evidence-based prevention increased significantly after the instructional session, as did that of the patients. Those patients whose bilateral hand and arm circumferences and/or risk assessment score were indicative of increased risk were provided with an arm sleeve and a physiotherapy consultation. Nurses and patients alike indicated high levels of satisfaction with the educational experience, the booklet and the risk assessment

strategies. Nurses play a key role in providing lymphedema education and motivating breast cancer patients to practice risk minimization strategies. Using evidence to prepare the educational experience and the booklet resulted in patient satisfaction and self-reported behavioral changes. This project resulted in nurses being provided with evidence-based knowledge and risk-reduction strategies for patient education and patients' reported appreciation of the knowledge they now had for lymphedema risk assessment and risk reduction.

#### 1420640

**TRAJECTORY OF OPIOID-INDUCED CONSTIPATION: A NURSE-SENSITIVE OUTCOME.** Susan C. McMillan, PhD, ARNP, FAAN, University of South Florida, Tampa, FL

**Underwriting/Funding Source:** National Institute for Nursing Research

**Objective:** Oncology nurse practitioners (NPs) will identify opioid-induced constipation as a significant nurse-sensitive problem in cancer patients that requires management.

Constipation, a common problem in cancer patients, is believed to be a nurse-sensitive outcome. Although it is amenable to nursing intervention, constipation often goes unrecognized and untreated in oncology settings, and can lead to serious complications if not managed. A significant problem facing oncology NPs with regard to treating opioid-induced constipation is the lack of research on which to base treatment decisions. Assessment forms the basis for treatment of any symptom, but little research has been conducted focusing on the prevalence and trajectory of this constipation. The purpose of this study was to determine the severity and trajectory of constipation among cancer patients at risk for constipation due to opioids. Theory of Unpleasant Symptoms: variables included intensity, distress, and timing. The sample consisted of 254 outpatients from a large NCI-designated comprehensive cancer center with various types of cancer who were accrued to Phase I of a large NIH-funded clinical trial and who were at risk for opioid-induced constipation. After baseline data were collected at the cancer center, patients were contacted weekly by telephone for 8 weeks to assess symptoms. Instruments used had strong evidence of validity and reliability. Constipation intensity was assessed by the Constipation Assessment Scale; constipation intensity and distress were assessed by items from the Memorial Symptom Assessment Scale. Data analysis included means, standard deviations, frequencies, percentages and Pearson correlations. While constipation intensity declined significantly over 8 weeks, a change of <1 point was so small (0-16 scale) that it was not clinically significant, and patients continued to have constipation. This small mean decrease probably occurred simply because the patients were being asked every week if they were constipated and whether they were taking laxatives, leading some patients to self-treat. This suggests that NPs could easily manage this prevalent problem. Some patients experienced severe constipation (16 on a 0-16 scale) for eight weeks and reported high levels of associated distress (6 on 0-10 scale). Symptom intensity and distress were significantly correlated ( $r=.76$ ;  $p=.000$ ) indicating that while these variables were related, they are different concepts, each of which deserves attention. Nurse practitioners and physicians in the cancer center were not adequately addressing opioid induced constipation. Because opioid-induced constipation can be severe and cause distress, NPs should take the time to assess and manage this common problem.

#### 1420773

**DEPRESSIVE SYMPTOMS AND NECK RELATED FUNCTIONAL DEFICITS IN PATIENTS WITH HEAD AND NECK CANCER.** Bethany Andrews, RN, MSN, ACNP-BC, Vander-

bilt University Medical Center, Nashville, TN; Sheila Ridner, RN, PhD, ACNP, Vanderbilt University Medical Center, Nashville, TN; Barbara Murphy, MD, Vanderbilt University Medical Center, Nashville, TN; Mary Dietrich, MS, PhD, Vanderbilt University Medical Center, Nashville, TN

**Underwriting/Funding Source:** National Institutes of Health: 1R01CA149113-01A1

**Objective:** To identify depressive symptoms and neck related functional deficits in patients with head and neck cancer (HNC).

Nurses are often the first point of contact for oncology patients before, during, and after treatment. It is important for oncology nurses to be familiar with common symptoms in HNC patients in order to provide holistic patient care. HNC affects approximately 50,000 individuals annually and accounts for 3% of all cancers in the United States. The purpose of this study is to examine depressive symptoms and neck related function in patients with HNC before and after treatment. The Theory of Unpleasant Symptoms was chosen to guide this study. The purpose of this theory is to better understand the experience of symptoms occurring in clusters. Thirty-one patients with HNC were assessed at baseline, immediately following treatment, and at 6 and 12 weeks post-treatment. Depressive symptoms were assessed using the Center for Epidemiological Studies Depression Scale (CESD), and neck-related function was assessed using the Neck Disability Index (NDI). SPSS was used to analyze the data. Descriptive statistics were used to summarize the distributions of demographic and study measures. The distributions of continuous measures were evaluated to determine normality, and appropriate statistical procedures were utilized. Participants were predominantly male (74%,  $n=23$ ), Caucasian (84%,  $n=26$ ), and married (68%,  $n=21$ ). Eighty-one percent ( $n=25$ ) were smokers at the time of diagnosis and 65% ( $n=20$ ) reported some level of alcohol use. Pain intensity, ability to work, and sleeping as measured by the NDI changed significantly across assessment time points ( $p=.007$ ,  $df=3$ ;  $p=.000$ ,  $df=3$ ;  $p=.010$ ,  $df=3$ , respectively). CESD scores decreased significantly ( $p=.007$ ,  $Z=-2.679$ ) from the end of treatment ( $m=16.69$ , median = 13) to 12 weeks post treatment ( $m=11.66$ , median = 10). Statistically significant correlations were found between participants' composite NDI and CESD scores at all assessment time points. In the three months following the end of treatment for HNC, patients' psychological distress decreases significantly. Neck related function and psychological distress are associated in this population. Pain, ability to work, and sleeping have the potential to influence psychological distress in HNC patients.

#### 1420831

**PATIENT CHARACTERISTICS ASSOCIATED WITH HOSPICE USE.** Barbara Daly, PhD, RN, Case Western Reserve University, Cleveland, OH, and University Hospitals Case Medical Center, Cleveland, OH; Sara Douglas, PhD, Case Western Reserve University, Cleveland, OH

**Underwriting/Funding Source:** NIH-NINR, grant # NR010787

**Objective:** To examine predictors of hospice use and length of stay in hospice while controlling for wide variation in clinician referral pattern.

Hospice is recognized as offering excellent end of life (EOL) care for persons with advanced cancer. However, there is concern that hospice is underutilized and, when patients transition to hospice, many transition only in the last week of life. Understanding patient characteristics that are associated with readiness to elect hospice would be helpful to clinicians in tailoring transition support and referral. To explore demographic and clinical characteristics associated with hospice use, while controlling for wide variation in referral patterns. The principle of autonomy directs



healthcare providers to respect individual values and preferences. While professionals identify hospice as the preferred EOL care delivery system, respect for autonomy directs us to tailor our approaches to the unique belief system of each patient. Analysis of data from an intervention trial of an interdisciplinary cancer support team (CST) in a comprehensive cancer center. A pre-post design was used to test the effect of the intervention on aggressiveness of care outcomes among 580 patients with advanced (Stage III or IV) lung, gastrointestinal, or gynecologic cancers. The CST provided symptom management and assistance in goal setting and transitions between aggressive treatment plans and a palliative focus. Incorporation of these supportive services provided some standardization in clinician referral patterns. Logistic regression was used to examine the influence of age, race, cancer type and stage, and social support on hospice use. Linear regression, using the same variables, was used to examine predictors of length of stay in hospice. 31.6% of all patients (87.3% of patients who died) enrolled in hospice during the study. Race was the only variable that was significant in the model as a predictor of hospice enrollment (OR 2.9,  $p=.046$ ). None of the variables were significant predictors of hospice length of stay. The findings regarding race are consistent with other reports and confirm the importance of controlling for race when examining use of hospice or aggressiveness of care indices. Clinical implications include the need to identify alternative care delivery approaches for EOL care that are sensitive to cultural influences.

#### 1420888

**PROTECTING: A GROUNDED THEORY STUDY OF CHILDREN'S EXPERIENCES IN THE CONTEXT OF MATERNAL BREAST CANCER.** Eileen Furlong, PhD, University College Dublin, Dublin, Ireland

**Objective:** The objective of the research was to generate a substantive theory through documenting and analyzing the day-to-day experiences 7-11 year-old children whose mothers' had been recently diagnosed with and receiving treatment for early-stage breast cancer.

The significance of this research lies in the examination of the experiences of children who live with parental physical illness. The theoretical understanding of children's experiences, specifically from the children themselves, of maternal breast cancer contributes to knowledge development within this area. The experience of living with a mother's diagnosis and treatment of breast cancer affects many children in Ireland. The purpose of the study was to describe and develop a theory of children's day-to-day experiences as they live with a mother who has been recently diagnosed with, and is receiving treatment for, early stage breast cancer. The central concern of this research was to understand how life was experienced by 7-11 year-old children whose mother had early-stage breast cancer. The most dominant sociological and psychological approaches in relation to children were examined. Epistemologically, constructionism was congruent with classic grounded theory in discovering patterns and processes of how the children constructed their reality, via their social interactions. Using classic grounded theory methodology, data were collected through 28 interviews with 7-11 year-old children whose mothers had been diagnosed with early-stage breast cancer during the previous four months. Classic grounded theory offers a rigorous, orderly guide for theory development and the four techniques central to the grounded theory method: coding, constant comparative analysis and memoing, were used to guide the analytical process. The quality and rigour of the study was assured by grounded theory's own criteria of fit, relevance, work and modifiability. Findings revealed that children employ a strategy called 'protecting' where they mediate three cyclical and iterative process of shifting normality, shielding and transitioning. Shifting normality described the processes of how participants contrasted

the certainty and control of their lives before their mother's diagnosis with their 'post-diagnosis' lives. Shielding described how the children tried to maintain normalcy in their lives with the need to curtail their activities in the context of maternal breast cancer. Transitioning described the processes by which the children reconciled their experiences to a 'new normality.'

#### 1420941

**CHANGES IN INSULIN RESISTANCE ASSOCIATED WITH ANDROGEN DEPRIVATION THERAPY IN MEN WITH PROSTATE CANCER.** Joanne M. Harrington, PhD, AOCNP®, ANP-BC, Phoenix VA Health Care System, Phoenix, AZ; Dawn Schwenke, PhD, MS, Phoenix VA Health Care System, Phoenix, AZ; Dana R. Epstein, PhD, RN, Phoenix VA Health Care System, Phoenix, AZ

**Underwriting/Funding Source:** ONS Foundation through an unrestricted grant from Novartis

**Objective:** Participants will describe changes in body composition and markers of metabolic syndrome in men who receive ADT as treatment for prostate cancer.

Androgen deprivation therapy (ADT) is associated with changes in body composition and metabolic profile that are associated with increased risk of cardiovascular events. Longitudinal studies confirming the adverse effects of ADT are limited. The prospective, parallel group design of this study provides additional evidence of adverse changes resulting from ADT. The purpose of this prospective study was to examine the trajectory of changes in body composition and metabolic profile in men who receive androgen deprivation therapy (ADT) for prostate cancer. A physiologic framework was used for this study. Fifty-five men initiating a program of radiation therapy with or without ADT for prostate cancer were recruited. Measurements occurred every 3 months for one year. Changes in parameters of metabolic syndrome during 1-year were estimated within ADT ( $n=31$ ) and non-ADT ( $n=24$ ) groups by general linear mixed effects models. Models included interaction between group (ADT versus non-ADT) and follow up time to test differences in changes between groups. Insulin resistance as estimated by Homeostasis Model Assessment (HOMA) was increased 32 % (95% confidence interval 7-64%,  $p<.02$ ) in ADT group by 3 months of treatment. No other measures were altered at 3 months in either group. At 1 year HOMA remained increased 39% (95% confidence interval 7-78%,  $p<.05$ ) for the ADT group while lean dry mass determined by bioelectrical impedance was increased 0.38 (SE 0.18,  $p<.05$ ) in the non-ADT group. One-year values for diastolic and systolic blood pressure, plasma glucose, HDL, triglycerides, hip circumference, and waist-to-hip ratio were unchanged from baseline at 1 year for both groups. One year changes did not differ significantly between groups for any metabolic variables or measures of body composition although the magnitude of the increase in HOMA appeared larger for the ADT group and the magnitude of the increase in lean dry mass appeared larger for the non-ADT group. This study demonstrated small adverse change in HOMA with ADT with very little change in other variables. This study suggests that it may be appropriate to screen for insulin resistance and implement strategies to reduce insulin resistance as early as 3 months after initiating ADT.

#### 1420949

**RESULTS OF A WHOLE PERSON, WELLNESS REHABILITATION PROGRAM FOR BREAST CANCER SURVIVORS.**

Kay Ryan, PhD, RN, A Time to Heal, Omaha, NE; Stephanie Koraleski, PhD, A Time to Heal, Omaha, NE

**Underwriting/Funding Source:** Susan G. Komen for the Cure Nebraska Affiliate

**Objective:** Describe the results of a twelve week, whole person, wellness rehabilitation program on multiple quality of life indices for women who have completed initial treatment for breast cancer.

When a patient completes medical treatment for breast cancer, they can leave the final treatment exhausted and fragile - on their own to reclaim their health and life. The purpose of this program was to integrate evidence-based interventions for rehabilitation after breast cancer treatment. Five years of data indicate positive impact of this multi-component program on several standardized quality of life measures. The program answers the question many oncology nurses are often asked "what can I do to help myself stay well now that I won't be taking medication/treatments to fight the cancer"? The problem: there was no organized, evidence-based, multi-component rehabilitation program available for survivors who had completed initial treatment for breast cancer. The purpose of this study was to measure the impact of a twelve week, multi-component rehabilitation program for women who had completed initial treatment for breast cancer. According to psychological/behavioral theory, having choices is empowering. Dr. Lawrence LeShan's seminal work in "creating a best life" for survivorship was inspirational to this program, along with Dr. Dean Ornish's cardiac rehabilitation model. The program described is a compilation of evidence-based interventions known to help cancer survivors become more healthy and empowered. The strategies employed in the program are based upon social learning theory, adult learning theory, Edna Foa's research on expressing trauma, and sound scientific wellness education on physical, mental and spiritual health. The research design is wait-list controlled survey research. N = 387. Each participant was asked to fill out the research instruments (BSI-18, FACIT-Sp, Post Traumatic Growth Inventory, Satisfaction with Life Scale, and HOPE Inventory) as a baseline three months before the program began and again on the first night of the program. The program met twelve weeks, one time each week for three hours. The instruments were readministered for the third time at the end of the last session and again six months after graduation. All instruments are acceptably reliable and valid from copious prior oncology research. The results were aggregated and reported. There is no significant change on any of the instruments from baseline to the beginning of the program. There is significant positive improvement from the first session to the end session ( $p < .001$ ) on all five measures. The change is sustained six months after the program ends. Implications for this research: there appears to be significant positive benefit to the program for women who have completed treatment for breast cancer.

#### 1421094

**EVALUATION OF A BREAST CANCER SURVIVORSHIP CLINIC THAT USES A GROUP MEDICAL APPOINTMENT MODEL: A PATIENT PROGRAM EVALUATION AND FINANCIAL ANALYSIS.** Kathy Trotter, DNP, RN, CNM, FNP, Duke University, Durham, NC; Susan M. Schneider, RN, PhD, AOCN®, FAAN, Duke University, Durham, NC

**Objective:** Describe the logistics of group medical appointments in a survivorship clinic, including the patient's perspective and the cancer center's cost benefit perspective.

Models of survivorship care are relevant to oncology nursing since there are increasing numbers of cancer survivors and nurses are leaders in the development of this phase of cancer care. Group medical appointments have been shown to improve access, health outcomes and health care utilization rates, as well as self-management skills. Cancer survivors are a growing population that needs surveillance, and attention to long-term and late side effects of their cancer and treatments. These needs are difficult to address in a brief follow up clinic visit. A new model of breast cancer survivor care was designed and piloted. Survivors attended the clinic together in groups

of six. An interdisciplinary group visit format in the initial part of the appointment provided surveillance, education and support, as well as formation of an individualized survivorship care plan. The first hour included review of their personal care plan and a 45-minute facilitated discussion. Afterwards, individual visits with the nurse practitioner, and dietitian, physical therapist, or social worker occurred. This quality improvement project aimed to evaluate the model from both the patient's and the organization's perspective. A 22-item Likert-type questionnaire sought participant opinions regarding logistics and the style and function of care delivered. 122 surveys were collected. Descriptive statistics (via SPSS v19) using ANOVA type regression were accomplished. Secondly, a retrospective two-group study of clinic financial data for follow-up patients was done. Cost and revenues from the group medical visit by the NP were compared to those seen traditionally by the MD (N=300). To measure access, review of time to third available appointment for each clinician was also recorded. The model appears feasible and highly satisfactory to participants. Participants scored the program high in providing quality care. Revenues and direct costs were nearly equal between delivery models, but potential downstream revenues from increased new patient access were notable. These outcomes are important for expansion of the group visit model both within the department, and in other cancers areas. The results support continuing the group visit model for survivorship care. The center's lung cancer clinicians will begin the model in August, 2012. Further evaluation should continue.

#### 1421159

**VIRTUAL REALITY: BRINGING A NEW REALITY TO POST-THORACOTOMY LUNG CANCER PATIENTS VIA A HOME-BASED EXERCISE INTERVENTION TARGETING FATIGUE.**

Amy J. Hoffman, MSN, PhD, RN, Michigan State University, East Lansing, MI; Ruth Ann Brintnall, PhD, AOCN®, APRN-BC, Grand Valley State University, Grand Rapids, MI; Jean K. Brown, PhD, FAAN, RN, The State University of New York at Buffalo, Buffalo, NY; Alexander von Eye, PhD, Michigan State University, East Lansing, MI; Debbie Ritz-Holland, BSN, RN, OCN®, Spectrum Health, Grand Rapids, MI; Mark Enter, BSN, RN, OCN®, Spectrum Health, Grand Rapids, MI

**Underwriting/Funding Source:** Michigan State University, College of Nursing, East Lansing, Michigan

**Objective:** Understand the impact of a fatigue intervention for post-thoracotomy lung cancer patients.

Little is known about rehabilitation for post-thoracotomy non-small cell lung cancer (NSCLC) patients. This research utilizes a perceived self-efficacy (PSE) enhancing exercise intervention that targets a priority symptom, cancer-related fatigue (CRF), for post-thoracotomy NSCLC patients during the critical transition from hospital to home. Cancer-related fatigue remains a severe, persistent problem for persons with NSCLC post thoracotomy. Evidence supports this population's greatest identified needs as managing fatigue, improving physical functioning, and providing a convenient exercise option. The purpose of this study was to determine the feasibility, acceptability, and preliminary efficacy of an innovative 16-week home-based exercise intervention designed to enhance PSE for CRF self-management for persons with NSCLC post-thoracotomy. This presentation reports on Phase 2 of a two-phase study. Phase 1 focused on initiation and tolerance of exercise during the 6 weeks immediately post-thoracotomy, while Phase 2 addressed maintenance of exercise for 10 weeks to include for some patients the initiation through completion of chemotherapy and/or radiation therapy. The Theory of Symptom Self-Management guided the intervention addressing important cognitive aspects

to achieve CRF self-management. The Transitional Care Model underpinned the approach addressing the critical transitions of post-thoracotomy recovery. A single-arm repeated measures design with seven NSCLC post-thoracotomy patients concluding 16 weeks after hospitalization. The intervention promoted light exercises utilizing an efficacy enhancing virtual reality approach using the Wii. Participants' age ranged from 53-73 years, with a mean of six co-morbid conditions. Despite most participants undergoing chemotherapy and/or radiation therapy, participants adhered to the intervention at a rate of 88% with no adverse events while giving the intervention high acceptability scores upon conclusion. Likewise, participants' CRF scores improved from initiation through the conclusion of the intervention with PSE for walking at a light-intensity continuously for 60 minutes improving significantly upon conclusion over presurgery values. This research will have a positive impact on the quality of life for persons with NSCLC post thoracotomy by providing support for the development and testing of a PSE enhancing intervention that optimizes CRF self-management.

#### 1421267

**IMMEDIATE EFFECTS OF A BREAST HEALTH EDUCATIONAL PROGRAM FOR CHINESE AMERICAN IMMIGRANT WOMEN.** Frances Lee-Lin, RN, PhD, OCN®, CNS, OHSU Beaverton, OR; Thuan Nguyen, MD, PhD, Oregon Health and Science University, Portland, OR; Nisreen Pedhiwala, MS, Oregon Health and Science University, Beaverton, OR; Usha Menon, PhD, RN, FAAN, Ohio State University, Columbus, OH

**Underwriting/Funding Source:** American Cancer Society

**Objective:** To improve mammography screening among Chinese American immigrant women using a targeted breast health educational program (TBHEP) intervention tested in a randomized controlled trial.

Early detection of breast cancer leads to higher survival, yet minority women in the U.S continue to be diagnosed at later stages with poor survival and higher mortality. Despite the known benefits of early detection, Asian American women consistently have the lowest mammography screening rate of all races. The Asian American (AA) population is the fastest-growing racial/ethnic population in the U.S., and Chinese Americans comprise the largest sub-group of AA. Breast cancer continues to be the most commonly diagnosed cancer among Chinese American women. The rate of having one mammogram in the last 1-2 years for Chinese American women ranged from 48.5% to 61%, well under the Healthy People 2020 projected goal of 81.1%. The purpose of this randomized controlled study was to test the efficacy of a culturally-responsive BC screening education program in increasing mammogram screening in Chinese American women compared to a brochure control group. Two popular models of health behavior change – the Transtheoretical Model of Change (TTM) and the Health Belief Model (HBM) guided the intervention. 291 women were randomized to receive a theory-based, targeted breast cancer screening educational intervention (n=142) or a mammography screening brochure published by National Cancer Institute (n=149). The intervention group received a 2-part targeted intervention (TBHEP) consist of group teaching with targeted messages followed by an individual counseling session after 10 days. In 3 months post-intervention, a total of 138 participants (47.4%) from both groups had a mammogram; 53 (35.57%) in the control group and 85 (59.86%) in the intervention group ( $p<0.0001$ ), showing significant intervention effect. In addition, there was significant knowledge difference (increase) between pre-test and 3-month follow up in the intervention group while this difference was much smaller (decrease) in the non-intervention group ( $p<0.0001$ ). Our targeted, culturally-responsive educational program significantly increased mammogram use

among Chinese American immigrant women by 3 months post-intervention. Future research should look at sustained increase in mammogram completion. Our intervention may also serve as a foundation from which to develop education to increase cancer screening among other minority sub-groups.

#### 1421272

**DISTRESS SCREENING WITHIN A COMMUNITY CANCER CENTER—CHALLENGES AND OPPORTUNITIES.** Dona M. Oliver, RN, MSN, MBA, Billings Clinic, Billings, MT; Karyl Blaseg, RN, MSN, OCN®, Billings Clinic, Billings, MT; Alison Weber, RN, BSN, Billings Clinic, Billings, MT; Jeannine Brant, PhD, APRN, AOCN®, Billings Clinic, Billings, MT

**Underwriting/Funding Source:** National Cancer Institute Community Cancer Center Program

**Objective:** Discuss challenges and opportunities with distress screening implementation including achieving buy-in, determining data collection tools, frequency of administration; inter-rater reliability and resource deployment.

Distress screening can draw attention to the needs of patients with cancer, ensuring prompt intervention and appropriate referral. The Institute of Medicine and National Comprehensive Cancer Network (NCCN) emphasize importance of screening to provide quality cancer care. The Commission on Cancer released a new standard, requiring programs to integrate distress screening into standard cancer care by 2015. The purpose of this review is to explore challenges and opportunities encountered in distress screening implementation. Patients were asked to fill out a modified version of the NCCN Distress Thermometer prior to each ambulatory oncology visit. Six months into the project the methodology was changed to have clinical staff ask patients distress screening questions as part of the rooming process. The latter method provided immediate data entry into the patient's EHR. Both methodologies provided physicians with feedback regarding status of patients' distress scores so that interventions could be deployed to address needs. Patients with a score of 6 or above were systematically referred to the Symptom Management RN who would contact the patient to further assess needs and schedule follow up with the Symptom Management Team as needed. As the screening methodology moved from patient self-report to staff inquiry, the volume of data increased substantially, but inter-rater reliability issues emerged casting doubt on data validity. Clinical staff who roomed higher volumes of patients more frequently documented lower distress scores suggesting that patients may be less likely to report distress to "rushed" clinical staff. While NCCN recommends patient referral with a distress score greater than 4, this clinic began with a score of 6 due to increased volume of patients needing referral. Distress screening can facilitate important referral processes to meet immediate physical symptom and psycho-social needs of oncology patients. To ensure successful implementation, ample consideration must be given to tools and methods used, staff education and training, and availability of resources. Electronic self-report of distress would be an optimal option.

#### 1421589

**ACHIEVING SUSTAINABILITY OF OUTCOMES FROM NURSE LED NON-PHARMACOLOGICAL INTERVENTIONS FOR DYSPNEA MANAGEMENT: A RANDOMIZED CONTROLLED TRIAL.** Patsy Yates, PhD, RN, Queensland University of Technology, Kelvin Grove, Queensland, Australia; Janet Hardy, BSc, MD, Mater Health Services, South Brisbane, Queensland, Australia; Helen Skerman, Queensland University of Technology, Kelvin Grove, Queensland, Australia; Isabella Zhao, RN, BNursing, BNursing (Hons), Queensland



University of Technology, Kelvin Grove, Queensland, Australia; Vanessa Brunelli, DipAppSc, BNursing, BNursing(Hons), Queensland University of Technology, Kelvin Grove, Queensland, Australia; Kwun Fong, Prince Charles Hospital, Chermide, Queensland, Australia

**Underwriting/Funding Source:** National Health and Medical Research Council

**Objective:** The primary objective of this study was to reduce severity of dyspnea (measured by 0-10 numeric rating scale/NRS), using tailored nurse-led non-pharmacological interventions. A secondary objective was to evaluate the sustainability of intervention effects over time.

Non-pharmacological interventions have the potential to improve lung cancer symptoms associated with progressive disease such as dyspnea, but few studies have examined their effectiveness over time. Dyspnea is a common distressing problem for cancer sufferers. Non-pharmacological strategies are reported to have some benefit although patients' ability to sustain their use over time is not established. This study evaluated the efficacy over time of a brief tailored non-pharmacological intervention comprising breathing retraining and psychosocial support for managing dyspnea in cancer patients. The intervention is based on Corner's multidimensional model which highlights interrelationships between physiological, social, emotional and environmental factors in the dyspnea experience. Using an RCT design, 144 eligible patients were randomized into an intervention (n=81) or control group (n=63). Intervention patients received four tailored sessions to develop patients' ability to control their dyspnea. Control patients received usual care. Outcomes were evaluated at: recruitment (T1), 4 weeks (T2) and 8 weeks (T3), with sustainability of the intervention assessed at monthly intervals for a further three months (T6). Changes over time in breathlessness ratings (NRS), functional status (ECOG), anxiety and depression (HADS) were determined by Linear Mixed Models. A 1-unit change in breathlessness ratings was a minimal clinically important difference. Treatment groups were comparable on demographic and clinical characteristics, except dyspnea-related distress was higher in the intervention group. Compared to the control group, the intervention group demonstrated a statistically significant: (1) improvement in average dyspnea from T1 (M=4.5, SE=.22) to T3 (M=3.6, SE=.24) versus (M=3.8, SE=.24) to (M=4.1, SE=.26); (2) greater control over dyspnea from T1 (M=5.7, SE=.28) to T3 (M=7.5, SE=.31) versus (M=6.8, SE=.32) to (M=6.6, SE=.33); and (3) greater reduction in anxiety from T1 (M=5.4, SE=.43) to T3 (M=4.5, SE=.45) versus (M=4.2, SE=.49) to (M=4.6, SE=.50). This study demonstrates efficacy of tailored non-pharmacological interventions that requires minimal clinical time in improving dyspnea on average, control over dyspnea, anxiety and distress for cancer patients.

#### 1421794

**IMPACT OF CANCER SYMPTOMS ON DIABETES SELF-MANAGEMENT IN ADULTS UNDERGOING CHEMOTHERAPY.** Denise S. Hershey, PhD, Michigan State University, East Lansing, MI; Barbara Given, PhD, RN, FAAN, Michigan State University, East Lansing, MI

**Underwriting/Funding Source:** Alpha Psi STT Chapter Research Award, and a Michigan Nurse Corp Initiative Scholarship, provided by the Michigan Department of Community Health and Michigan Department of Labor and Economic Growth

**Objective:** Develop an increased understanding of how cancer treatment related symptoms can interfere with the performance of self-management activities for diabetes and the implications of this in regards to practice.

Approximately 8 - 18% of all cancer patients have diabetes when they receive their cancer diagnosis. Patients with both cancer and diabetes have a higher mortality rate, are more likely to develop complications and be hospitalized while receiving chemotherapy. Cancer patients undergoing chemotherapy will experience a myriad of symptoms. Research has shown how these symptoms can have a negative impact on an individual's quality of life. For patients who have both cancer and diabetes the interference chemotherapy associated symptoms has on the performance of diabetes self-management behaviors unknown. To explore the relationship between symptoms and impact cancer treatment has on diabetes self-management in adults with a solid tumor cancer undergoing chemotherapy over an 8 week period. Based on the Devins theory of illness intrusiveness. This exploratory study utilized a baseline self-administered written survey, and an 8 week telephone follow up survey which included two open ended questions. Eight community outpatient cancer centers in Michigan and Ohio were utilized to recruit 43 individuals with preexisting diabetes who were undergoing chemotherapy for a solid tumor cancer or lymphoma. Descriptives, correlations, t-tests and linear regression were utilized to analyze the data. After a minimum of 8 weeks of chemotherapy patients performed significantly ( $p=.001$ ) fewer diabetes self-management behaviors. Total symptom severity, specifically the symptom of fatigue and type of treatment was significantly ( $p<.001$ ) associated with overall interference with the patient's performance of their diabetes self-management activities in general, and the performance of exercise related activities. Cancer treatment and cancer related symptoms can have a negative impact on diabetes self-management behaviors in adults with diabetes who are undergoing chemotherapy. By having an increased awareness regarding how cancer treatment can impact the care and management of diabetes, can lead to the development of interventions targeted to improve the care and outcomes for patients with diabetes cancer. Further research is needed in order to better understand this important healthcare problem.

#### 1421812

**CANCER FEAR AND FATALISM: THE COMPLEXITY AND DUALITY OF AFRICAN-AMERICAN CONSTRUCTIONS OF RESEARCH SUBJECT IDENTITY.** Darryl Somayaji, PhD, MSN, RN, CCRC, Roswell Park Cancer Institute, Buffalo, NY

**Objective:** The aim of this paper was to explore how perceptions of being a research subject shape the African-American identity of "research subject" in dichotomous and complex ways.

Influences of historical events, cultural ideologies, and institutional practices create complex barriers when attempting to engage historically underserved populations in cancer research. The relationship of dualism and the language-in-use surrounding being a "research subject" in social contexts are multifaceted and complex. This phenomenon needs to be explored when developing cancer research recruitment strategies for African-Americans. This study highlights the relationship of the African-American participant with the research community and focuses on how language, perceptions, and historical interactions related to race, identity, and power may have contributed to sustaining inequitable relationships that keep potential African-American research subjects from participating in cancer clinical trials. An historical framework of postcolonial theory and a combination of discourse and linguistic analysis was used to explore the relationship of research subject, cancer, and the research community. Three African-American focus groups were conducted including people who had never participated in cancer research, those who had, and those who were asked but refused (n=16). The data units were coded, sorted, and synthesized for words, phrases, and exchanges related to the relationships of fear, fatalism, research,

race, power, and identity. Cancer fear and fatalism emerged as important constructs that shaped focus group discussion resulting in complex, dual and liminal identities. Participants across the groups experienced tensions between self-responsibility, family responsibility, and community responsibility that emerged as positive or negative descriptions of those relationships. Fears were associated with the unknown, death, mistrust, conspiracy and discrimination. Participant word associations were tied to identity, knowledge, beliefs, race, and ideals that establish their stories about cancer fears and research. Fear, fatalism and historical and relational influences can be a predictive factor in how people perceive themselves as research subjects. Additional nursing research is needed to explore these important relationships. Recognizing and understanding the complexities of factors that contribute to health disparities in society may give us a better appreciation of individual agency, power, identity, and how the dynamics of individual, community, and organizations influence equitable healthcare.

### 1421931

**PERCEPTIONS OF HOSPITAL READMISSION IN PATIENTS DIAGNOSED WITH SICKLE CELL DISEASE.** Deborah Hanes, MSN, RN, CNS, ARNP, The Ohio State University Comprehensive Cancer Center–The James Cancer Hospital, Columbus, OH; Massa Nnadi, The Ohio State University Comprehensive Cancer Center–The James Cancer Hospital, Columbus, OH; Stefani J. O'Connor, The Ohio State University Comprehensive Cancer Center–The James Cancer Hospital, Columbus, OH; Janine Overcash, PhD, GNP-BC, The Ohio State University Comprehensive Cancer Center–The James Cancer Hospital, Columbus, OH, and The Ohio State University, Columbus, OH; Lorie Petty, The Ohio State University, Columbus, OH, and The Ohio State University Comprehensive Cancer Center–The James Cancer Hospital, Columbus, OH; Mary Weiss, BS, RN, CCRC, OCN®, The Ohio State University Comprehensive Cancer Center–The James Cancer Hospital, Columbus, OH

**Objective:** To identify factors that influence readmission and wellness and Sickle Cell Disease (SCD) patients.

SCD affects 70,000-100,000 people in the United States. It is important for oncology nurses to be knowledgeable about SCD symptoms and complications, as these patients are frequently cared for by hematological specialists. This research study is important in that it seeks to understand psychosocial components of hospital readmission. Hospital readmission is a common occurrence for many SCD patients. In addition to pain crises, it is important to understand other dynamics associated with hospital readmissions. The purpose of this study is to illustrate factors that influence readmission and wellness. The theoretical framework for this project is relationship-based care. Understanding challenges outside of the clinic or hospital setting is critical to meeting patient and family needs. Establishing a relationship with the patient and family can help anticipate problems before hospitalization is needed. This prospective, cross-sectional, open-ended interview study included patients diagnosed with SCD who were either inpatient or outpatient at a Midwestern cancer hospital. A seven item questionnaire addressed the subjects' perceptions of hospital admission, responsibilities and stressors at home, support persons, and coping strategies. Participants could relate multiple responses for each item. Responses were grouped according to like themes and were analyzed with frequencies. Patients (N=34) consisted of 23 women and 11 men, with a mean age of 29 years. Perceptions of reasons for hospital readmissions or clinic visits were pain (n=19), weakness (n=1), check-ups (n=12), anemia (n=1), and dehydration (n=1). Most suggested they were able to perform chores or daily activities (N=23). Causes of stress were family

(n=13), finances (n=6), pain (n=4), hospital visits (n=3), job or school (n=3), chores (n=4) and other (n=5). Support person consisted of family (n=29), friends (n=10), and church (n=4). Coping strategies included relaxation (n=16), medications (n=2), TV (n=7), exercise (n=6), keeping active (n=5), faith (n=3), and hydration (n=2). Subjects perceived that hospital readmissions are associated with pain. Many subjects were very independent at home. While family was most often reported as support persons, they were also reported as causes of stress. Most patients used relaxation as a coping mechanism.

### 1422025

**DEVELOPING AND TESTING A PROTOCOL FOR TITRATING OPIOIDS TO CONTROL CANCER PAIN IN THE AMBULATORY SETTING.** Nancy Wells, RN, DNSc, FAAN, Vanderbilt University Medical Center, Nashville, TN, and Vanderbilt University, Nashville, TN; Mary Dietrich, MS, PhD, Vanderbilt University, Nashville, TN; Barbara Murphy, MD, Vanderbilt University Medical Center, Nashville, TN

**Underwriting/Funding Source:** National Cancer Institute grant # R01 CA095413

**Objective:** The oncology nurse will be able to identify 2 criteria for opioid titration for ambulatory patients.

Good control of cancer pain improves patients' function, mood and quality of life. Thus, developing strategies to improve cancer pain control will lead to better patient experience. One barrier to cancer pain control is the lack of timely opioid dose adjustment. We developed and tested an opioid titration protocol, administered by clinic nurses, to improve cancer pain control. The Model of Critical Steps for Adequate Pain Outcome, which focuses on decision making and patient-provider communication, guided this study. A randomized clinical trial with 2 conditions was conducted; pain managed by clinic nurses using an opioid titration protocol (Arm 1) or standard care (Arm 2). Eligibility criteria included current use of opioids for pain control. Patients on Arm 1 had opioids managed by the study nurse as directed by a protocol that specified: dose adjustments based on pain level and use of breakthrough medication. Patients on Arm 2 had their pain managed by their oncologist. Patients completed a daily pain diary and were contacted weekly by telephone to assess pain control and side effects using validated instruments. Primary outcomes included average and worst pain measured using a 0-10 numeric rating scale. Data were collected on type of analgesics prescribed and number of opioid titrations made. Duration of study participation was 8 weeks. Data were analyzed using Generalized Linear Modeling. Of 99 patients enrolled from 9 ambulatory clinics, 47 completed a minimum of 5 weeks of data and were included in the analyses. At study entry all patients had a fixed dose opioid and the majority (73 – 100%) had a p.r.n. opioid prescribed. Patients in Arm 1 (n=25) had more opioid titrations than patients in Arm 2 (n=22; p<.05). Mean scores for average and worst pain did not differ by treatment arm or time. For both groups, worst pain remained moderate while average pain shifted from moderate to mild. There were no severe adverse events confirming feasibility and safety of the protocol. Future research on timing of assessment and opioid adjustment and meeting patients' pain goals is warranted.

### 1422037

**AN INNOVATIVE MODEL OF PATIENT-CENTERED CANCER CARE IN AN INTERPROFESSIONAL LEARNING ENVIRONMENT.** Jennifer Smith, CNP, Department of VA Affairs, Cleveland, OH; Sonya Curry, BSN, MSN, Department of VA Affairs, Cleveland, OH; Melanie Lynch, MD, Department of VA Affairs, Cleveland, OH; Lisa Arfons, MD, Department



of VA Affairs, Cleveland, OH; Polly Mazanec, PhD, ACNP, FPCN, AOCN®, Department of VA Affairs, Cleveland, OH

**Underwriting/Funding Source:** Office of Academic Affairs

**Objective:** To implement a system redesign for quality cancer care while preparing health care professional students to function in a team-based practice setting.

Quality Improvement for Patient-Centered Ambulatory Cancer Care & Interprofessional Education. The purpose of this Center of Excellence project, which is funded by the Office of Academic Affairs (OAA) is twofold: 1) to provide timely interprofessional specialty care at a Midwestern academic Veterans Affairs Medical Center (VAMC) for veterans who have a positive cancer screening test, concerning symptoms, or a diagnosis of cancer. Current specialty care practices at many medical centers often operate in distinct silos, fragmenting care and burdening patients and families with conflicting information and multiple appointments. 2) to simultaneously transform the learning experience for health care professionals' students, by preparing them for the future of quality cancer care: working in a team-based practice. This VAMC has developed a novel weekly cancer clinic with interprofessional (nursing, medicine, social work, psychology and chaplaincy) and interdisciplinary (medical oncology, surgical oncology, plastic surgery, and radiology) team members and their clinical students working together in one designated area. Patients are prescreened by the advanced practice nurse (APN) patient navigator and given a one hour appointment with specific disciplines, individually tailored to patient needs. Learners deliver patient care alongside team members and are active participants in scheduled interprofessional education sessions in the clinic (patient review prior to clinic, "lunch and learn", and a 90 minute debriefing at the end of the day). Data are being collected include patient demographics, satisfaction with system redesign, frequency and severity of symptoms across the disease trajectory. Health care professional students' change in attitudes towards interprofessional team-based care is being evaluated pre and post clinical rotations. This clinic is innovative because of its system redesign which tailors clinic appointments to the patient's needs. In addition, it provides a unique learning environment, preparing health care professional students to work in interprofessional teams to provide quality patient-centered cancer care.

#### 1422125

### **CANCER-RELATED FATIGUE: PREVALENCE, SEVERITY, CORRELATES, AND PREDICTORS IN PATIENTS FOLLOWED BY ADVANCE PRACTICE REGISTERED NURSES IN THE INPATIENT SETTING.**

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**Objective:** To present research findings related to cancer related fatigue to improve care.

Currently data are limited that describe cancer-related fatigue (CRF) and related symptoms in patients followed by Advance Practice Registered Nurses (APRNs) in inpatient settings. Most data are based on outpatients or inpatient palliative care patients. Currently pain is the only symptom routinely recorded in the inpatient setting. Since CRF is one of the most common and distressing symptoms experienced by cancer patients, capturing its characteristics using validated scales might improve symptom

assessment, documentation and management. The study aims were to identify CRF incidence, severity, correlates and predictors in patients followed by APRNs in the inpatient setting. Piper's Integrated Fatigue Model. Descriptive cross-sectional study. Inpatients (n=30) were predominantly Caucasian, married, college-educated and 57 years old (range=38-88). Patients were screened by APRNs to determine eligibility (Blessed Orientation Cognition and Memory Scale; BOMC). Consenting patients self-completed a packet containing a demographic form and other validated scales: the Adapted Symptom Experience Scale (ASES), The National Comprehensive Cancer Network (NCCN) Distress Scale, the Medical Outcomes Study Short Form-36 Physical Functioning Subscale (MOS-SF-36-PF), the Karnofsky Performance Scale (KPS), the Piper Fatigue Scale-Revised (PFS-R), the Center for Epidemiological Survey of Depression (CES-D), and the Pittsburgh Sleep Quality Index (PSQI). Descriptive and inferential statistics were used to analyze the data. Average PFS-R scores were 3.8 (SD: 2.51). Seven had no CRF (0; 23%); 5 had mild CRF (1-3; 16.7%); 15 had moderate CRF (4-6; 50%) and 3 had severe CRF (7-10; 10%). Significant PFS-R correlations included: number of ASES symptoms present (r=0.59, p=0.01), ASES severity Index (r=0.66, p=0.01), ASES bothersome Index (r=0.67; p=0.01), ASES interference index (r=0.71, p=0.01); CES-D total score (r=0.45; p=0.05); KPS (r=-0.63, p=0.01), and MOS-SF-36 PF (r=-0.55, p=0.01). When these variables were entered into the stepwise regression analyses, 63% of the variance was explained by the ASES Interference Index and the KPS. These findings suggest that targeting interventions to those most at risk (i.e., those who have moderate to severe CRF [4-10]) and other self-perceived symptoms that interfere with functioning) might improve CRF management in inpatient settings.

#### 1422157

### **LOCKE-WALLACE SHORT MARITAL-ADJUSTMENT TEST: PSYCHOMETRIC EVALUATION IN CAREGIVERS FOR PERSONS WITH PRIMARY MALIGNANT BRAIN TUMOR.**

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**Underwriting/Funding Source:** National Cancer Institute

**Objective:** The learner will identify the reliability and validity of the Locke-Wallace Short Marital-Adjustment Test in caregivers for persons with primary malignant brain tumor (PMBT).

PMBT often causes the patient's cognitive and physical dysfunction, which can deteriorate caregiver's marital satisfaction. Poor marital satisfaction has been reported to be associated with caregiver burden and distress. A reliable and valid marital adjustment scale is necessary to help oncology nurses measure the marital satisfaction of caregivers and develop targeted interventions to improve caregiver outcomes. There is little evidence that a reliable and valid scale can be used to measure marital adjustment in caregivers for persons with PMBT. This study was to evaluate the psychometric properties of the MRST in a sample of caregivers for persons with PMBT. The Pittsburgh Mind Body Center Model was adapted to describe how disease characteristics of a PMBT may trigger psycho-behavioral responses in caregivers and lead to changes in overall health. This analysis utilized data from 114 caregivers who participated in a descriptive longitudinal study (R01CA117811). Telephone interviews were conducted and included the MRST and the Caregiver Reaction Assessment (CRA) to measure caregiver burden. Factor structure of the MRST was assessed by Principal



Axis Factoring with Promax rotation. The internal consistency reliability was tested using Cronbach's alpha. Convergent and discriminant validity were evaluated between extracted factors and sub-dimensions of the CRA. Five factors were extracted and explained 60.55% of total variance. Four of the factors were interpreted as Contentment & Communication, Leisure & Sociality, Intimacy, and Shared Philosophy. One factor was uninterpretable. Cronbach's alpha for four factors ranged from .63 to .74. Convergent and discriminant validity were confirmed between four factors and two sub-dimensions of the CRA ( $r = -.35$ ,  $p < .0001$ ;  $r = -.43$ ,  $p < .0001$ ;  $r = .07$ ,  $p = .49$ , and  $r = -.04$ ,  $p = .67$  respectively). The MRST is reliable and valid to measure marital adjustment in caregivers for persons with PMBT and should be considered in the assessment of marital quality and caregiver burden in this population.

#### 1422223

**MEASURING MUSCULOSKELETAL SYMPTOMS IN PATIENTS RECEIVING AROMATASE INHIBITORS.** Karen Swenson, RN, PhD, AOCN®, Park Nicollet Institute, St. Louis Park, MN; Mary Jo Nissen, PhD, MPH, Park Nicollet Institute, St. Louis Park, MN; Alice Shapiro, PhD, RD, Park Nicollet Institute, St. Louis Park, MN; Laura Maybon, RN, Park Nicollet Institute, St. Louis Park, MN; Jean Pupkes, RN, ACNS-BC, AOCN®, North Memorial, Robbinsdale, MN; Michaela Tsai, BS, Park Nicollet Institute, St. Louis Park, MN

**Underwriting/Funding Source:** ONS Foundation through an unrestricted grant from Susan G. Komen for the Cure®, Park Nicollet Foundation

**Objective:** 1) identify instruments sensitive for measuring MSS, 2) model the time course and predictors of change in MSS, and 3) explore the effect of MSS on adherence to AIs in women during AI treatment.

Current guidelines recommend endocrine treatment with aromatase inhibitors (AIs) in post-menopausal women with hormone receptor-positive breast cancer. Musculoskeletal symptoms (MSS) are common with AIs, but there is no consensus on methods to measure these symptoms. The purpose of this study is to evaluate functional tests and standardized instruments for their ability to prospectively assess MSS in women receiving AIs for breast cancer. This study uses Bandura's Social Cognitive Theory which incorporates self-efficacy driving adherence based on perceived benefits versus risks of AIs. We prospectively enrolled 149 breast cancer patients beginning AI treatment for breast cancer. We assessed MSS prior to initiating AI and again during AI treatment with validated questionnaires (BCPT Symptom Scale, MD Anderson Brief Pain and Fatigue Indexes, AUSCAN, WOMAC, QuickDASH, PROMIS Physical Function SF), and established physical function tests (Hand Grip Strength, Timed Up and Go Test) at baseline, and at 1, 3 & 6 month after starting AIs. Adherence was measured with a medication diary completed by the patients. Demographic and clinical data were summarized with descriptive statistics. Effect size for each measure of MSS was calculated to allow comparisons between measures of sensitivity to change from baseline to six months. A total of 23 (15%) of 149 participants discontinued initial AI during the 6-month study period. Analyses were conducted on 122 women; mean age was 62.7 years. The BCPT Musculoskeletal Symptom Scale showed relatively high sensitivity for measuring MSS. By the BCPT, MSS increased from baseline to 6 months with over 50% of participants reporting MSS at 6 months. Final results will identify the most appropriate instruments to measure MSS associated with AIs. The identification of the most sensitive measures of MSS will allow efficient screening for these symptoms. Because MSS can affect AI adherence, oncology nurses should help patients manage MSS.

#### 1422236

**MORAL DISTRESS IN ONCOLOGY NURSES: EXPERIENCES WITH PROGNOSIS RELATED COMMUNICATION IN ADVANCED CANCER PATIENTS.** Susan McLennon, PhD, RN, Indiana University, Indianapolis, IN; Sue Lasiter, PhD, RN, Indiana University, Indianapolis, IN; Wendy Miller, PhD, RN, Indiana University, Indianapolis, IN; Kathryn Amlin, BSN, RN, Indiana University Health, Indianapolis, IN; Amy Chamness, BA, Indiana University Health, Indianapolis, IN; Paul Helft, MD, Indiana University Health, Indianapolis, IN

**Underwriting/Funding Source:** Walther Cancer Foundation, Inc. Indianapolis, IN

**Objective:** Describe common barriers faced by oncology nurses when engaging in prognosis related communication with advanced cancer patients.

Oncology nurses have opportunities to engage in meaningful conversations with advanced cancer patients about their prognosis but encounter a variety of barriers including ethical conflicts. Barriers include not knowing what has been explained to the patient, role uncertainty, fear of giving conflicting information, taking away hope, and more. Nursing is known as a moral profession however obstacles to providing optimal care and unresolved ethical tensions may lead to moral distress and hinder nurses' abilities to assist patients toward quality of life at the end-of-life. Thus, greater understanding of oncology nurses' experiences in these challenging situations is needed. Describe nurses' experiences with prognosis related communication with advanced cancer patients. A model of moral distress guided this study. Thematic analysis of transcribed interviews from 27 nurses employed in a various oncology settings. Purposive sampling was used to capture a range of nurses' experiences. Three experienced researchers hand coded the data and categories were identified. Final themes will be developed. Methods to ensure validity and reliability were instituted. Participants were 25 women and 2 men who were predominately Caucasian/white (89%) and less than 51 years old (82%). Most had bachelor's degree in nursing (82%) and a mean of 8.6 years of oncology experience. Preliminary categories were "Seeing Things through a Nurse Lens", "Dealing with Death", "Working the System", "Constraints on Nursing Practice", "Recognizing Uniqueness", and "Caring from the Heart". Oncology nurses routinely encountered barriers and ethical dilemmas when engaging in prognosis related communication with advanced cancer patients such as non-beneficial treatments, overly aggressive care, and incomplete disclosure. Areas identified for intervention included physician-nurse relationships, communication training, and dealing with hope, denial, and family conflict. Consequences of nurse moral distress may include avoiding difficult conversations, limiting advocacy responsibilities, job dissatisfaction, and nurse and patient suffering. Assisting nurses to negotiate these challenging circumstances may reduce moral distress and improve the quality of care for cancer patients as they near the end-of-life.

#### 1422237

**USE OF AN AGGRESSIVENESS OF CARE INDEX TO MEASURE ADHERENCE TO NATIONAL COMPREHENSIVE CANCER NETWORK (NCCN) GUIDELINES.** Sara Douglas, PhD, RN, Case Western Reserve University, Cleveland, OH; Barbara J. Daly, PhD, RN, Case Western Reserve University, Cleveland, OH

**Underwriting/Funding Source:** National Institutes of Nursing Research (Grant No: NR010787)

**Objective:** To identify key Aggressiveness of Care Indices that can be used to measure NCCN guidelines in research studies.

Describe the use of indices of aggressive care as an important research measure of NCCN Guidelines for Palliative Care. With increased attention paid to quality of life issues (QOL) in oncology, palliative care has become integral in comprehensive cancer care. The goal of the NCCN palliative care guidelines is to ensure that patients with cancer have the best QOL throughout their illness trajectory. When conducting research examining effectiveness of interventions that focus on palliative care, the use of a standardize approach will facilitate the ability to compare outcomes and add to the science in nursing and medicine. An intervention trial of an interdisciplinary cancer support team (CST) in a comprehensive cancer center was conducted. A pre-post design was used to test the effect of the intervention on aggressiveness of care outcomes among a sample of 580 patients with advanced lung, GI, and GYN cancer. The CST, using NCCN guidelines, provided symptom management and assistance in goal setting and transitions between aggressive cure-oriented treatment plans and a palliative focus. We examined key outcomes (hospice use, hospice length of stay), and also examined aggressiveness of care for both groups, using an "Aggressiveness Index" comprised of 6 indicators. Descriptive statistics were used to examine performance on 6 aggressiveness indices based upon prior work and to compare our findings to those of others who have reported performance using aggressiveness indices. Comparing our outcomes with others, using standardized definitions and objective criteria, has allowed us to interpret our data in the larger context of national healthcare systems. Such information is helpful for clinical and research decision making. We found that both experimental and control groups performed equally well on the 6 indices. We also noted that our facility performed better in several of the indices (IV chemotherapy in last 14 days, more than 1 ED visit in last 30 days of life) yet had higher rates of new chemotherapy administration compared with others. Given the insights we gained using the Aggressiveness Index, we recommend adoption of this measurement approach for relevant research and clinical improvement projects.

**1422283**  
**THE ONCOLOGY NURSING SOCIETY ONCOLOGY NURSE NAVIGATOR ROLE DELINEATION STUDY.** Carlton G. Brown, PhD, RN, Memorial Sloan-Kettering Cancer Center, New York, NY

**Objective:** The purpose of the Oncology Nursing Society (ONS) Oncology Nurse Navigator Role Delineation Study (RDS) was to examine the job-function activities of the Oncology Nurse Navigator, thus providing an understanding of this unique new role.

Specifically, it was designed to a) identify major classifications of tasks, knowledge statements, and skills required for this job; b) develop from this a set of specific tasks and knowledge statements to incorporate into a survey; c) determine demographics relevant to the study; and d) integrate demographics, rating scales, and tasks into a survey instrument. A Role Delineation Advisory Committee (RDAC) consisting mainly of Oncology Nurse Navigators identified 92 tasks, 32 knowledge statements, and 12 skills that could be considered pertinent to the practice of an Oncology Nurse Navigator. The survey, conducted in 2009 by ONS with assistance from Applied Measurement Professionals (AMP), was offered to nurses who consider themselves nurse navigators. To rate the importance of the tasks and knowledge statements to their current practice, participants were asked, "Consider whether you need to perform the task, and if not, answer "0" (not necessary), and second, if you do need to be able to perform the task, indicate how significant it is by selecting the appropriate response (1 to 5)" (5 being most important). The instrument was given to 661 nurses; of these, 330 completed the

survey. Results from this study can help to form a foundation for future competency development and possible certification opportunities. Numerous findings related to the demographics of the sample will be presented, including gender, practice location, practice type, percentage of time spent as a navigator, and current certification. This presentation will also share significant statistical ratings for tasks, knowledge, and skills of the developing role of the Oncology Nurse Navigator.

**1422311**  
**MEASURING NEEDS IN NEURO-ONCOLOGY CAREGIVERS.** Jennifer Prince, BSN, RN, University of Pittsburgh, Pittsburgh, PA; Lauren Terhorst, PhD, University of Pittsburgh, Pittsburgh, PA; Chien-Wen Choi, MS, University of Pittsburgh, Pittsburgh, PA; Heidi Donovan, PhD, RN, University of Pittsburgh, Pittsburgh, PA; Barbara Given, PhD, RN, FAAN, Michigan State University, East Lansing, MI; Paula Sherwood, PhD, RN, CNRN, FAAN, University of Pittsburgh, Pittsburgh, PA

**Underwriting/Funding Source:** NIH

**Objective:** The learner will identify the factor as well as conceptual structure of a needs assessment tool for family caregivers.

Understanding caregiver needs is vital to implement tailored interventions to improve both caregiver health and the quality of care provided to the care recipient. Family caregivers of persons with a primary malignant brain tumor (PMBT) have reported poor emotional and physical health as a result of unmet needs, yet a widely accepted needs assessment is not available in this population. The purpose of this study was to examine the factor structure in a newly created needs assessment instrument in caregivers of persons with a PMBT. This study is based on the Adapted Pittsburgh Mind-Body Center Model which examines behavior and biological pathways accounting for the relationship between psychosocial factors and susceptibility to illness. As part of a longitudinal, descriptive study (R01CA117811), 62 adult caregivers were recruited from neurosurgery/neuro-oncology clinics within one month of their family members' diagnosis. Caregivers completed both quantitative and qualitative measures at diagnosis, 4, 8, and 12 months diagnosis, data from which were used to create the content of the needs assessment. In this study, psychometric analysis of the instrument was performed using principal components analysis, scree plots, and eigen values to determine factor loadings. Cronbach's alpha was used to determine reliability. Ten factors were identified by principal components analysis, scree plot, and eigen values. Conceptual analysis combined these factors into five categories: 1) Legal and financial issues, 2) Disease management, 3) Symptom management, 4) Communication, and 5) Maintaining one's own health. Subscore correlations were above 0.5 in all cases except one, indicating distinct constructs. Coefficient alpha for the tool was 0.88, indicating strong reliability. Clinically this instrument could be used to identify specific needs of caregivers of persons with a PMBT so that individualized interventions can be tailored to specific care situations. Future research should explore psychometric analysis on a larger sample of caregivers to provide support for the tool's use.

**1422382**  
**EXPLORING THE CORES OF ONCOLOGY ADVANCED PRACTICE NURSING IN SOUTH KOREA: A QUALITATIVE STUDY.** Miese Seol, RN, Asan Medical Center, Seoul, Republic of Korea; Young Ah Kang, MSN, RN, Asan Medical Center, Seoul, Republic of Korea; Ah Rang Jung, MSN, RN, Asan Medical Center, Seoul, Republic of Korea; Eunyoung E. Suh, PhD, FNP, RN, Seoul National University, Seoul, Republic of

**Objective:** Upon the completion of this presentation, the audience will be able to address three cores of oncology advanced practice nursing in South Korea.

The roles and practice scope of APN (advanced practice nurse) have flourished particularly in cancer nursing in South Korea, since the APN legislative act was activated in 2003. Given the fact that cancer incidence rates and the number of cancer survivors increase more than ever before, the needs for providing cancer patients and families with quality care by APNs grow in parallel. Although specified patient education and advanced practice are known to differentiate APN roles from those of registered nurses (RN) or physicians, intangible nature of APN roles impedes the evaluation of APN care-sensitive outcomes. This qualitative study, thus, was aimed to explore and conceptualize the cores of oncology advanced practice nursing, which is expected to refine the uniqueness of quality care provided by APNs. Naturalistic and constructive perspectives philosophically undergirded this study. This qualitative study was conducted with sixteen oncology APNs in an urban cancer center in South Korea. The participants were recruited upon a written agreement for research participation and an in-depth interview with each participant was conducted using semi-structured interview questions. All interviews lasted for about 1 hour. The interviews were tape-recorded and transcribed into transcript. Qualitative thematic analysis technique was utilized for data analysis. All participants were female and aged from 29 to 43. The years of clinical experience as RN were more than 5 years, while the years of working as oncology APN were from 15 months to 14 years. All participants reported the invisible but apparent cores of nursing cares provided by them. Especially the roles of providing care from cancer diagnosis to survivorships, coordination, and problem solving were commonly expressed. Elicited three overriding themes included "providing continued care throughout cancer trajectory," "bridging the gap between physicians and patients," and "meeting the individualized needs of patients and families." Numerous anecdotes proving the findings in their day to day practice were addressed. The cores of care provided by oncology APN were acknowledged and refined in this study. Further research on APN-sensitive patient outcomes was warranted as the link with these findings.

#### 1422395

**THE POWER OF HOPE IN DECISION MAKING FOR CANCER RESEARCH PARTICIPATION.** Kathleen Shannon Dorcy, RN, PhD, Fred Hutchinson Cancer Research Center, Seattle, WA, and University of Utah, Salt Lake City, UT

**Underwriting/Funding Source:** American Cancer Society Scholarship

**Objective:** To describe the ethical implications in language used in discussions about clinical research participation often includes subtle and obvious influences of hope.

Hope is a powerful influence on people making decisions about participating in cancer clinical trials (CT) and creates a potential ethical dilemma for oncology nurses facilitating the care of patients enrolled in CT. Hope is a concept esteemed in the oncology setting, yet in the case of decision making (DM) for research participation, the process must be free of coercion. The purpose of this research was to examine if and how the language of hope was utilized by hematopoietic stem cell transplant (HSCT) patients in discussions pre and post enrollment in a Phase II CT. The design/analysis of the study was guided by the work of Pierre Bourdieu who believed that the language people use in conversation creates its own meaning. Thus the words or metaphors chosen by patients in conversations about enrolling in CTs

can inform providers about key values in DM. This descriptive study of existing interviews utilized content and critical discourse analysis employing the software HyperResearch®. Within a large NCCN center patients were interviewed pre and approximately 80 and 365 days post HSCT. Metaphors for hope were one of several codes systematically applied to the textual data and analyzed with interpretive methods. Twenty-five patients who were enrolled in a Phase II HSCT CT completed interviews. Five major categories of metaphors for hope were identified in the participants' interviews: journey, hands, faith, time, and war. Journey was the most common metaphor implying the enrollment into cancer clinical trials were simply part of "road to cure." Hope is a powerful multidimensional concept and oncology nurses should recognize how hope can unduly influence people to select research participation in studies where the benefit to harm ratio is mixed. General public discourse links cancer to hope and reinforces the practice of researchers and oncology clinicians inadvertently invoking the coercive power of hope in treatment decisions. These findings have ethical implications for the process of informed consent for research participation DM and for the clinical care of oncology patients.

#### 1422457

**CULTURAL DIFFERENCES IN ATTENTIONAL DYSFUNCTION BETWEEN KOREAN AND AMERICAN WOMEN FOLLOWING ADJUVANT CHEMOTHERAPY FOR BREAST CANCER.** Mi Sook Jung, PhD, RN, University of Michigan, Ann Arbor, MI; Bernadine Cimprich, PhD, RN, University of Michigan, Ann Arbor, MI

**Underwriting/Funding Source:** 1) NIH, NINR, R01-NR010939; 2) Predoctoral Fellowship, Behavioral Cooperative Oncology Group, Mary Margaret Walther Program of Cancer Care Research

**Objective:** The objective was to identify the influence of culture on attentional functioning in eastern and western women treated with chemotherapy for breast cancer.

Altered attentional function has been reported as a distressing side effect of adjuvant chemotherapy for breast cancer in western countries. However, no studies have examined attentional responses to chemotherapy for breast cancer in eastern countries. Differences in attentional function may exist between eastern and western societies due to culture-specific responses to life-threatening events like cancer. This study compared actual performance and perceived attentional function, and examined whether predictors of attentional function were similar between Korean and American women following chemotherapy for breast cancer. Based on neurocultural theory, attentional processes underlie effective functioning in everyday life and may be influenced by cultural differences in responses to life-threatening illness such as breast cancer, thereby requiring different levels of cognitive effort to cope with illness between cultures. Sixty-three women treated for localized breast cancer from the U.S. (n=32) and Korea (n=31) approximately four months following adjuvant chemotherapy and 65 age-matched healthy controls (Koreans=32, Americans=33) within one year after routine negative screening mammograms were tested with standard attention tests (Attention Network Test, Digit Span) and a self-report questionnaire (Attentional Function Index, AFI). Objective and self-report data were analyzed using comparative statistics and generalized linear models. The Korean breast cancer group scored significantly lower ( $p<.01$ ) on the Total Attention Score (TAS), a standardized score of test performance, and self-reported AFI scores than Korean controls and both American patients and controls. Notably, a difference in the TAS remained even after controlling for demographic and clinical variables within breast cancer groups. Older age, less education, and unemployment significantly predicted poorer performance (TAS) and lower effectiveness in functioning



(AFI) in American women ( $R^2=.22$  respectively), while older age and having breast cancer were important predictors in Korean women ( $R^2=.44$  and  $.41$ , respectively). Chemotherapy-treated Korean women showed worse attentional function than disease- and race-matched comparison groups. These findings provide important new evidence for cultural influences on attentional function. Further studies are needed to examine the pertinent cultural factors affecting attentional processes and to determine culturally appropriate interventions to alleviate cognitive dysfunction after chemotherapy for breast cancer.

#### 1422461

**SELF-REPORTED SYMPTOMS AND SYMPTOM DISTRESS IN PATIENTS WITH HEAD AND NECK CANCER RECEIVING CHEMORADIATION.** Stewart M. Bond, PhD, RN, AOCN®, Vanderbilt University, Nashville, TN, and Vanderbilt University Medical Center, Nashville, TN; Mary S. Dietrich, PhD, Vanderbilt University, Nashville, TN, and Vanderbilt University Medical Center, Nashville, TN; Barbara A. Murphy, MD, Vanderbilt University, Nashville, TN and Vanderbilt University Medical Center, Nashville, TN

**Underwriting/Funding Source:** John A. Hartford Foundation Building Academic Geriatric Nursing Capacity Program through the American Academy of Nursing

**Objective:** To describe changes in self-reported symptoms and symptom distress in patients with head and neck cancer during concurrent chemoradiation.

Concurrent chemoradiation (CCR) is a standard treatment for locally advanced head and neck cancer (HNC). While aggressive multimodality treatment has improved survival, patients experience increased acute treatment toxicities. Treatment-related symptoms change over time. This study examined changes in self-reported symptoms and symptom distress in HNC patients during CCR. A symptom management framework guided the study. Symptom prevalence and distress were prospectively assessed in 62 HNC patients before CCR and weekly during CCR using the Memorial Symptom Assessment Scale – Short Form (MSAS-SF). The MSAS-SF yields total number of symptoms, physical (PHYS) and psychological (PSYCH) symptom distress scores, and a global distress index score (GDI). Descriptive statistics were used to summarize the data. McNemar tests for paired binary observations were used to examine differences in the proportion of patients reporting symptoms from baseline to last assessment during CCR. Wilcoxon Signed Ranks Test was used to examine differences in symptom distress. The HNC patients were predominantly male (81%), Caucasian (92%), and married (79%), with at least a high school education (87%). Mean age was 54 years (Range 33-70). Before CCR, patients reported a median of 8 symptoms (Range 0-25). The most prevalent symptoms included worry (73%), low energy (69%), feeling nervous (64%), pain (60%), difficulty sleeping (53%), and feeling sad (52%). At the last assessment during CCR, symptom prevalence had increased to a median value of 17 (Range 6-28); 28 symptoms were reported by more than 25% of participants. The proportion of patients reporting moderate to severe symptom distress increased for 16 symptoms. Statistically significant increases in GDI and PHYS distress scores were observed ( $p<.001$ ). PSYCH distress scores were essentially unchanged. HNC patients receiving CCR experience a large number of symptoms associated with treatment. Psychological symptoms were more prevalent at baseline. At the last assessment during CCR, the number of reported symptoms was significantly increased. Physical symptoms were more prevalent and caused more distress. Oncology nurses caring for HNC patients must assess symptoms frequently and implement symptom management strategies in response to changing symptom profiles over the course of treatment.

#### 1422507

**EFFECT OF ORAL EVEROLIMUS ON MARKERS OF BONE RESORPTION AND FORMATION AND DISEASE PROGRESSION IN BONE IN WOMEN WITH ADVANCED BREAST CANCER.** Jan Hronek, MSN, ACNP, AOCNP®, Sarah Cannon Research Institute, Nashville, TN

**Underwriting/Funding Source:** Novartis Pharmaceutical Corporation

**Objective:** To describe the effects of everolimus (EVE) on markers associated with bone loss and disease progression due to bone metastases in postmenopausal women with estrogen receptor-positive (ER+) advanced breast cancer (BC).

Knowledge of endocrine therapy-related effects on bone health is paramount for oncology nursing professionals who are at the forefront of drug administration and care of postmenopausal women with BC who have bone metastasis. Additionally, postmenopausal women are at greater risk for bone loss; therefore, a thorough understanding is needed to optimize therapeutic benefit and reduce adverse events (AEs). To evaluate clinical response, bone disease progression, and biological markers of bone loss, in EVE-treated women with ER+ advanced BC. The mTOR pathway has been shown to play a role in osteoclast cell survival, thereby regulating the rate of bone loss. EVE, an oral mTOR inhibitor, may affect the balance between bone resorption and deposition by osteoclasts and osteoblasts, respectively. BOLERO-2 was a double-blind, placebo-controlled, phase 3 study evaluating exemestane (EXE) (25 mg/day) in combination with EVE (10 mg/day) or placebo (PBO) in postmenopausal women ( $N=724$ ) with ER+, letrozole- or anastrozole-refractory advanced BC. Biological markers of bone turnover were assessed at 6 and 12 weeks post treatment initiation as an exploratory endpoint. Baseline bone metastasis was well balanced in the EVE+EXE and PBO+EXE groups (76% [ $n=370$ ] and 77% [ $n=184$ ], respectively). Baseline bisphosphonate use was 55% for PBO+EXE and 44% for EVE+EXE. At follow-up (12.5 months), progression-free survival was significantly higher with EVE+EXE ( $n=485$ ) vs PBO+EXE ( $n=239$ ) ( $P<0.0001$ ). Treatment with PBO+EXE was associated with a marked increase in bone turnover, evident as early as 6 weeks after commencing treatment, whereas EVE+EXE opposed this increase. Worsening of a preexisting bone lesion or new bone lesion (progressive disease in bone) was decreased with EVE+EXE. Bone related AEs were 3.1% for EVE+EXE vs 3.8% with PBO+EXE. Exploratory analyses suggest that EVE plus endocrine therapy may decrease the incidence of progression due to bone metastases and that EVE may reverse increases in markers associated with bone loss that occur with EXE treatment.

#### 1422511

**THE ELECTRONIC SELF REPORT ASSESSMENT AND INTERVENTION FOR CANCER: UNDERSTANDING THE RESULTS OF A RANDOMIZED TRIAL.** Donna L. Berry, PhD, RN, AOCN®, FAAN, Dana-Farber Cancer Institute, Boston, MA; Fangxin Hong, PhD, Dana-Farber Cancer Institute, Boston, MA; Barbara Halpenny, MA, Dana-Farber Cancer Institute, Boston, MA; Yating Yeh, PhD, Dana-Farber Cancer Institute, Boston, MA

**Underwriting/Funding Source:** National Institute of Nursing

**Objective:** To describe the results of an analysis of a process variable to explain the positive effects of an intervention.

Attending to symptoms and side effects promotes safe, effective delivery of cancer therapies. The electronic self report assessment for cancer (ESRA-C) clinician summary has been shown in a previous trial to increase discussion of symptoms

and quality of life issues (SQI) and, in a subsequent trial with enhanced patient centered intervention, to reduce symptom distress. The purpose of this analysis was to evaluate one mechanism through which the ESRA-C intervention (INT) resulted in lower symptom distress, patient communication of SQI to clinicians. Applying the Quality Health Outcomes Model, we explored a variable that potentially contributed to a positive health outcome. Patients with all cancer types treated at two comprehensive cancer centers used ESRA-C to self report SQI prior to cancer therapy. Patients were randomized to standard ESRA-C with summary reports delivered to clinicians (control) or ESRA-C INT adding self-monitoring SQI between clinic visits with self-care SQI education, plus customized coaching on how to report SQI to clinicians, all delivered via the Internet to patients' homes or a tablet at the cancer center. We analyzed the intervention effect on patients' and/or caregivers' unprompted verbal reports of SQI intensity, duration, alleviating/aggravating factors and need for help during audio-recorded clinic visits. Among all discussed, problematic SQIs, two measures were defined for each patient: the percent SQI that were reported as coached and an index of how many coached statements were made during the report. The Wilcoxon rank test was used to compare the measures between groups. Among 752 participants, 515 (255 INT) patients' clinic visits were audio-recorded. A median 87% of the problematic SQI's were reported with at least one statement as coached in the INT group vs. 75% in the control group ( $p=.0009$ ). The median report index was 0.33 and 0.25 for the INT and control groups, respectively ( $p=0.008$ ). Adding electronically-delivered, self-care instructions and communication coaching to ESRA-C promoted patient verbal report regarding the nature of problematic SQI compared with ESRA-C assessment alone. This process variable is important to understand the ability of interventions such as ESRA-C to reduce symptom distress.

#### 1422520

**HAVING HEALTHY CONVERSATIONS: THE EVOLVING ROLE OF ONCOLOGY ADVANCED PRACTICE NURSES IN FACILITATING ADVANCE CARE PLANNING IN STAGE IV POPULATIONS.** Sabrina Mikan, PhD, RN, ACNS-BC, Texas Oncology, Austin, TX, and University of Texas, Austin, TX; Patricia A. Carter, PhD, RN, CNS, University of Texas, Austin, TX; Deb Harrison, PhD, RN, CNS, McKesson Specialty Health, Woodlands, TX

**Objective:** Oncology advanced practice nurses (APNs) can identify patient values and improve end-of-life care satisfaction by facilitating interdisciplinary advance care planning (ACP) meetings in specific Stage IV populations.

APNs who introduce ACP to specific stage IV cancer patients can decrease the stigma of these conversations. This in turn "normalizes" important conversations, improving quality patient care and the rate of ACP documentation (e.g. Advance Directives, Medical Power of Attorney, Out-of-Hospital-Do-Not-Resuscitate documents). To identify ACP Metrics within an oncology-specific electronic health record (EHR) in order to develop strategies APNs can use to increase healthcare provider awareness of ACP sessions and completion of documentation. With stage IV colon, lung, breast, and pancreatic cancers were identified by oncologists and referred through physician's orders to the APN for ACP meetings. The APN held two meetings with the patient and family. Meetings consisted of values assessment, ACP education, discussion of patient wishes regarding illness and end-of-life care and completion of documents. A historical chart review revealed 2,746 patients met Stage IV criteria between January 2009 – March 2012. During this time frame, 59 patients had an ACP intro-

duction, 95 had evidence of advance directives, and 230 were referred to hospice. This ongoing project is focused on finding ways to improve these service rates. Since implementing the new intervention in March 2012, 30 patients have been referred for ACP. A 12% increase over past rates. Oncology APNs can facilitate ACP conversations to assist in identifying patient values and improve end of life care satisfaction. ACP documentation in the EHR for Stage IV cancer patients is essential to provide seamless transitions in medical care. Documentation supports patient-directed care.

#### 1422521

**END-OF-LIFE TOOLKIT FOR NURSES: IMPLEMENTATION OF AN INPATIENT PATHWAY FOR ONCOLOGY PATIENTS AND FAMILIES.** Elizabeth Arthur, AOCNP®, The Wexner Medical Center at The Ohio State University, Columbus, OH; Diana McMahon, RN, The Wexner Medical Center at The Ohio State University, Columbus, OH; Julia Denlinger, RN, The Wexner Medical Center at The Ohio State University, Columbus, OH; Karen Kuhns, RN, The Wexner Medical Center at The Ohio State University, Columbus, OH; Marthamay Bode, RN, The Wexner Medical Center at The Ohio State University, Columbus, OH; Michael D. Adolph, MD, The Wexner Medical Center at The Ohio State University, Columbus, OH

**Objective:** The purpose of this project was to implement a nurse-driven process improvement initiative for end-of-life care at a Comprehensive Cancer Center.

QI through implementation of an end-of-life pathway for hospitalized oncology patients. The American Society of Clinical Oncology, National Institute of Nursing Research and Oncology Nursing Society prioritize symptom management and end-of-life care for quality improvement. The James Cancer Hospital Quality Committee appointed a multidisciplinary task force to improve EOL care for hospitalized patients. After review of the literature, a clinical pathway was chosen because research shows improved quality of care, more effective use of resources, and enhanced satisfaction. A computerized order set, a nursing documentation flowsheet, and a summary instruction document were created. In addition to unit-based nurse education sessions, a Nursing Grand Rounds featured Dr. Marilyn Bookbinder PhD who discussed her experiences with EOL pathways. A pilot of the pathway intervention began in late 2010 on the unit with the greatest burden of deaths and discharges to Hospice. The Quality Committee requested expansion of the project to 2 additional nursing units, and the hospital board endorsed the project as a primary quality initiative for an additional two years with the eventual goal of implementation throughout the cancer hospital. The project has also attracted interest at the health system level for diffusion throughout all inpatient facilities. Evaluation of the project from a RE-AIM perspective (Reach, Efficacy, Adoption, Implementation, and Maintenance) identifies ways the program is structured for effective delivery and maintenance in a cancer research setting. The Advanced Cancer Care Pathway was envisioned, designed, taught, and implemented with nurses contributing and often leading at every step. Implementation of an end-of-life pathway has implications for oncology nursing with enhanced ability to provide high quality care at a crucial time for patients and families. Further research is needed to explore patient-centered outcomes such as symptom management, transitions to home, and patient/family satisfaction. System outcomes that may also be impacted include hospital length of stay, healthcare cost, and staff satisfaction. To our knowledge this is the first end-of-life pathway implemented in a NCI Comprehensive Cancer Center. Evaluation of the impact of the quality improvement project is reviewed using the REAIM Framework.



1422553

**TNF ALPHA PHENOTYPES AND SYMPTOMS OF STRESS IN CAREGIVERS OF PERSONS WITH PRIMARY MALIGNANT BRAIN TUMORS.** Stephanie Gilbertson-White, PhD, RN, University of Pittsburgh, Pittsburgh, PA; Anna Marsland, PhD, University of Pittsburgh, Pittsburgh, PA; Katarina Krajina, BS, University of Pittsburgh, Pittsburgh, PA; Heidi Donovan, PhD, RN, University of Pittsburgh, Pittsburgh, PA; Paula Sherwood, PhD, RN, FAAN, University of Pittsburgh, Pittsburgh, PA

**Underwriting/Funding Source:** National Cancer Institute

**Objective:** The objective of this analysis was to evaluate relationships between tumor necrosis factor alpha (TNFα) phenotypes and symptoms of stress in caregivers (CGs) of persons with a primary malignant brain tumor (PMBT).

Family CGs play critical roles in the delivery of care to cancer survivors. Understanding the relationships among caregiving stress, physical and psychological symptoms and immune response may shed light on phenotypic variations in responses to stress. TNFα is an important cytokine in the physiologic stress response and is associated with symptoms of pro-inflammatory responses. There are known genotypic variation in TNFα associated with proinflammatory pathways, however, phenotypic variations in TNFα response associated with caregiving stress have not been well described in the literature. Understanding the effect of caregiving in this high risk population is critically important to oncology nursing. We examined changes in circulating levels of TNFα and explored the associations between TNFα levels and physical and psychological symptoms in CGs at the time of diagnosis and 8-months post-diagnosis. The Pittsburgh Mind-Body Center Model provided the theoretical framework. This study was a secondary analysis of 57 PMBT CGs' self-reports of physical and psychological symptoms, and quality-of-life (QOL) using valid and reliable measures at baseline and 8 months. Frozen samples of plasma were analyzed for circulating levels of TNFα using ELISA sandwich assays. The sample was dichotomized by TNFα response pattern over-time. Analyses included descriptive statistics, Pearson correlations, and analysis of variance. Increased circulating TNFα levels were significantly associated with decreased QOL scores, symptoms of infections (diarrhea, respiratory and ophthalmic symptoms) at baseline and/or 8-months. No statistical differences were found for the total number of symptoms, anxiety, depression, and QOL scores between baseline and 8-months. Analysis of subgroups based on TNFα change over-time profiles (increased, decreased/stable) yielded significant between group differences. Decreased/stable TNFα group denied symptoms at baseline, reported GI symptoms at 8-months, and stable depression and anxiety scores over-time. The increased TNFα group reported the presence of respiratory symptoms at baseline and decreasing depression and anxiety scores over-time. These findings provide support for the existence of TNFα phenotypes that can be characterized unique psychological and physical symptom responses to stress.

1422705

**EXPERIENCES OF PATIENTS WITH LUNG CANCER CONTENDING WITH SLEEP/WAKE DISTURBANCES WHILE ENACTING HOPE FOR OPTIMAL TREATMENT OUTCOMES.** Suzanne S. Dickerson, DNS, RN, State University of New York at Buffalo, Buffalo, NY; Eman Abusabbah, MS, RN, State University of New York at Buffalo, Buffalo, NY; Hongjuan Jing, MS, RN, State University of New York at Buffalo, Buffalo, NY; Grace Dean, PhD, RN, State University of New York at Buffalo, Buffalo, NY

**Underwriting/Funding Source:** Oncology Nursing Society R27

**Objective:** To gain an understanding of the treatment and illness trajectory related to sleep/wake disturbances and the beliefs and practices of patients while enacting hope for optimal treatment outcomes.

While it is known that patients' with lung cancer have a high prevalence of sleep/wake disturbances, little is known about the related illness and treatment trajectory and the potential influence of poor sleep on patients experiences. By gaining understanding through narrative analysis of the patients' experiences in dealing with poor sleep and a cancer diagnosis, nurses will gain insight into potential interventions to improve sleep and support effective outcomes. The purpose of this study is to explore sleep/wake disturbances in individuals before, during and at 6 months during treatment for non-small cell lung cancer through analysis of illness narratives. The specific aims are: 1.) to understand how sleep patterns have changed since diagnosis and over time (baseline, 2nd and 3rd chemotherapy and at 6 months), and how the changes affect their daily lives; and 2.) to describe the patients' beliefs and practical knowledge used in managing their sleep difficulties. Interpretive phenomenological approach of Heideggerian Hermeneutics forms the basis for development of the interview questions and analysis of narratives. 26 individuals treated for lung cancer, 10 at VA Medical Center and 16 at Roswell Park Cancer Institute were interviewed over time. Sixteen males and 10 females participated in interviews and were asked open-ended questions about their diagnosis, how it influenced their sleep, and what they would suggest for other patients. Twenty-one completed the second interview, 15 the third, and 8 completed the 6 month interview. Once they entered hospice, most dropped out from the study. The seven stage hermeneutical process was used to analyze the narrative texts. Findings indicated that initially all but 2 individuals described poor sleep, such as, trouble falling asleep and frequent awakenings. Over time, as the treatment worsened their sleep symptoms, these individuals still embraced treatment as hope for more time. This hope enabled them to tolerate the sleep wake disturbances and treatment side effects. As the treatment effectiveness declined, their hope changed: for some, they focused on spiritual meanings for the future, or for others, they kept living life with a purpose. Findings offer insight to oncology nurses on how to provide opportunities for dialogue about options and choices for treatment and improve sleep.

1422714

**PATIENT BELIEFS AND THEIR INFLUENCE ON ADHERENCE TO ORAL ANTI-CANCER AGENTS.** Sandra L. Spoelstra, PhD, RN, Michigan State University, East Lansing, MI; Barbara Given, PhD, RN, Michigan State University, East Lansing, MI; Charles W. Given, PhD, College of Human Medicine, Michigan State University, East Lansing, MI; Alla Sikorskii, PhD, Michigan State University, East Lansing, MI; Mei You, MS, Michigan State University, East Lansing, MI

**Underwriting/Funding Source:** ONS Foundation through an unrestricted grant from GlaxoSmithKline

**Objective:** 1) To describe how beliefs about oral anti-cancer agents influence adherence in those with cancer. 2) To describe implications for nurses regarding adherence to oral anti-cancer agents and patient beliefs.

To focus clinicians on what to address with patients on oral agents to promote adherence. With increased use of oral anti-cancer agents, patients are responsible for adhering to complex regimens. The aim of this study was to explore beliefs about oral anti-cancer agents and describe how those beliefs were associ-



ated with adherence to the regimens among 119 solid tumor cancer patients taking oral agent regimens. The trial assessed beliefs about oral anti-cancer agents and used a cognitive behavioral model to compare the impact of: usual care with strategies to manage symptoms and adherence, and a third arm that focused only on managing adherence. Exploratory factor analysis (EFA) with varimax rotation was used to assess beliefs items and t-tests examined responses to beliefs on adherence, regardless of study arm. Twenty-eight items directed at assessing patient beliefs about oral agents were collected at baseline with responses on a 5 point scale (strongly disagree to strongly agree). Adherence measures were collected weekly (8) and at exit. The sample consisted of 37 men and 82 women, who were age 28 to 86, and 76% Caucasian. Based on EFA, 19 of the 28 questions asked regarding beliefs were retained in the model. These 19-items loaded onto 4-factors: 'Reduce dosing to manage symptoms', 'Confusion with dosing', 'Belief in effectiveness of oral agent', and 'Trouble with affordability'. Cronbach's alpha corresponding to these 4-factors was 0.82, 0.89, 0.84, and 0.72 respectively. Validation of subscales was assessed by observing differences in adherence to oral agents. Differences in adherence were found for 'Confusion with dosing' ( $p=0.012$ ) and 'Trouble with affordability' ( $p=0.003$ ), while no differences were found for 'Reduces dosing to manage symptoms' or 'Belief in effectiveness of oral agent' ( $p>0.05$ ). Patients who believed they were less confused about the regimen dosing schedule or had fewer affordability problems, were more likely to adhere to oral agents. Nurses should provide detailed written and verbal information on the oral agent regimen dosing schedule, and confirm patient understanding, to reduce confusion with dosing. Affordability with oral agents should be assessed for all patients, and assistance with payment should be sought from insurers or drug companies, for those who need it.

#### 1422731

### DOES LIFETIME EXPOSURE TO HORMONES PREDICT COGNITIVE FUNCTION IN WOMEN PRIOR TO ADJUVANT THERAPY FOR BREAST CANCER?

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**Underwriting/Funding Source:** National Cancer Institute

**Objective:** To compare cognitive function in women with breast cancer before initiation of systemic adjuvant therapy to healthy women and examine whether factors related to lifetime exposure to hormones predict cognitive function at pre-therapy.

Cognitive impairments interfere with work, decision making, performance of daily activities and therapy adherence. Women with breast cancer have poorer cognitive function before initiating adjuvant therapy than healthy women; the basis for poorer pre-therapy cognitive function is unclear. The purpose of this investigation is to compare pre-therapy cognitive function between women with breast cancer and controls and examine whether hormone exposure over the course of women's lives predicts differences in cognitive function before therapy. Women's exposure to reproductive hormones over their lifetime may predict cognitive function. We compared cognitive function in postmenopausal women with breast cancer pre-adjuvant therapy to healthy, age- and education-matched postmenopausal women and examined whether hormone exposure factors (menstrual, parity, oral contraceptive (OC) use, HRT use, and menopausal) predicted cognitive function before therapy. We also examined whether age, IQ, mood and fatigue predicted pretreatment cognitive function. Data were analyzed using regression analyses. Women with breast cancer ( $n=206$ ; mean age=60.2) performed more poorly than controls ( $n=92$ ; mean age=58.7) in

verbal memory ( $p=.05$ ) and attention ( $p=.006$ ). Higher IQ predicted better performance in every cognitive domain for the breast cancer and control groups. Of the hormone exposure factors, in the breast cancer group, past OC use predicted better verbal memory ( $p=.02$ ) and attention ( $p=.03$ ); greater years since OC use predicted poorer attention ( $p=.02$ ); greater years since menopause predicted poorer visual memory ( $p=.001$ ) and executive function ( $p=.05$ ) and longer HRT duration predicted poorer attention ( $p=.02$ ). In the control group, greater years since OC use predicted poorer verbal memory ( $p=.04$ ) and attention ( $p=.04$ ); greater number of pregnancies predicted poorer attention ( $p=.01$ ) and longer HRT duration predicted poorer attention ( $p=.001$ ). Neither mood nor fatigue predicted cognitive function in any domain in either group. Factors related to reproductive hormone exposure may predict cognitive function in women but these factors do not appear to predict poorer pre-therapy cognitive function in women with breast cancer. Other factors influence cognitive function at this timepoint.

#### 1422745

### ORAL EVEROLIMUS IN ELDERLY WOMEN WITH ADVANCED BREAST CANCER: SAFETY RESULTS FROM THE 12.5-MONTH FOLLOW-UP OF THE BOLERO-2 TRIAL.

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**Underwriting/Funding Source:** Novartis Pharmaceutical Corporation

**Objective:** To educate oncology nursing professionals on the tolerability of everolimus (EVE) in combination with exemestane (EXE) and management strategies in women  $\geq 65$  years old with advanced breast cancer (BC).

Knowledge of age-related adverse event (AE) differences caused by EVE treatment will allow oncology nursing professionals to facilitate medication adherence and improve day-to-day patient care. To describe EVE-associated AEs that arose during the BOLERO-2 trial in women  $\geq 65$ . Safety data from a 12.5-month follow-up are presented. Endocrine therapy resistance remains an obstacle for postmenopausal patients with estrogen receptor-positive (ER+) advanced BC and is often the cause of lack of response and disease progression. EVE, an oral mTOR inhibitor, is being evaluated as potential drug therapy to combat constitutively active mammalian target of rapamycin (mTOR) signaling seen in patients resistant to therapy. BOLERO-2 was a double-blind, placebo-controlled, phase 3 study evaluating EXE (25 mg/day) in combination with EVE (10 mg/day) or placebo in postmenopausal women ( $N=724$ ) with ER+, letrozole- or anastrozole-refractory advanced BC. At follow-up, progression-free survival significantly improved in EVE-treated patients  $< 65$  or  $\geq 65$  years old (hazard ratio [HR]=0.37;  $P<0.05$  or HR=0.56;  $P<0.05$ , respectively). The incidence of stomatitis (52.1%), rash (32.3%), pneumonitis (14.6%), and hyperglycemia (12.5%) in patients  $\geq 65$  years old was comparable with the overall population. Grade 3-4 AEs reported in EVE-treated patients  $\geq 70$  years old ( $n=161$ ) were fatigue (10.2%), anemia (10.2%), hyperglycemia (8.5%), stomatitis (7.6%), dyspnea (6.8%), pneumonitis (5.1%), neutropenia (3.4%), and hypertension (3.4%). Hyperglycemia was managed according to guidelines; optimal glycemic control was recommended before initiating EVE therapy. Stomatitis (grade  $\geq 2$ ) was managed with low-dose oral corticosteroid (swish-and-spit) solution and analgesic mouth treatments. At our institution, preventive measures for stomatitis included education on good oral hygiene and recommending placing medication in a marshmallow or spoon of Cool Whip®. Grade 3 (grade 2 if necessary) noninfectious pneumonitis was managed with oral corticosteroids and treatment interruption. Exploratory data suggest that EVE is effective regardless of patient age. Evidence-based AE management practices for elderly oncology patients will allow nurses to improve patient care and therapy outcomes.

1422858

### **SLEEP AND QOL IN LUNG CANCER: PATTERNS ACROSS THE DISEASE TRAJECTORY.**

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**Underwriting/Funding Source:** ONS Foundation in partnership with the National Lung Cancer Partnership

**Objective:** Determine presence of pre-existing sleep disorders in patients with lung cancer

Research reveals that lung cancer patients have significantly worse sleep when compared to healthy controls and other cancer diagnoses. However, studies are lacking on whether lung cancer sleep problems are preexisting or the result of lung cancer treatment. The purpose of this study was to describe and compare changes in subjective and objective sleep and qol in patients before, during and after treatment for lung cancer. The two process model of sleep regulation guided this study. Eligible participants were recruited from a VA medical center and a comprehensive cancer center. A prospective, repeated measures, one group design was used. Valid and reliable subjective sleep was measured with the Pittsburgh Sleep Quality Index (PSQI) and Epworth Sleepiness Scale (ESS). Objective sleep was measured with the motionlogger actigraph (Ambulatory Monitoring, Inc., Ardsley, NY). Quality of life was measured with the Functional Assessment of Cancer Therapy-Lung (FACT-L). Descriptive and inferential statistics were used to describe the sample and determine changes in sleep and quality of life before, during and after treatment for lung cancer. Among 29 participants, 90% with advanced stage (III/IV) lung cancer, mean age was 67 years (sd=9.5, range 49-86), 83% Caucasian, 62% male, 44% married and 63% completed high school. PSQI data revealed that 65 % of participants reported poor sleep quality at baseline. Subjective sleep did not significantly change during or after treatment. According to actigraphy data, 65% of participants slept less than 6.5 hours per night. Objective sleep did not significantly change during or after treatment. Bed partners reported witnessed sleep disordered breathing in 12 (46%) and restless legs in 5 (17%) participants at baseline that improved during and after treatment. Daytime sleepiness measures are present at baseline and do not significantly change during and after treatment. FACT-L data revealed that emotional wellbeing improved, lung cancer subscale and FACT Trial Outcome declined significantly at pre 2nd chemotherapy. Poor sleepers had lower FACT-L scores than good sleepers (p=0.08). Lung cancer patients have difficulty falling and staying asleep and witnessed apneas before treatment begins indicative of pre-existing early and middle insomnia and sleep disordered breathing accompanied by daytime sleepiness. Results should be verified in a larger sample. Patients should be routinely assessed for sleep disturbances before treatment for lung cancer.

1423114

### **THE IMPACT OF EXERCISE ON HEMATOPOIETIC STEM CELL TRANSPLANT PATIENTS.**

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**Underwriting/Funding Source:** American Cancer Society

**Objective:** Determine the impact of exercise on function, fatigue, strength and cardiopulmonary status in stem cell transplant patients and identify predictors that aid in adherence to an exercise program during treatment.

Research in exercise with patients undergoing hematopoietic stem cell transplantation demonstrates positive benefits in physical performance and fatigue. The results are similar to research in cancer and physical activity. However, small sample sizes, lack of

randomization and heterogeneity of settings limit translation into practice. The aims of this study were 1) test the feasibility (recruitment, adherence and attrition) of introducing an exercise intervention versus attention control (general health education) with patients undergoing a hematopoietic stem cell transplant and 2) examine the relationship between the intervention versus general health education on functional capacity, fatigue, perceived exertion, muscular strength and cardiopulmonary status. The third aim examined the relationships of attitudes, intention to exercise, subjective norms and perceived behavioral control. This study was guided by the Theory of Planned Behavior. Sixty participants were randomly assigned to either the exercise intervention or the general health education group. Participants were followed during stem cell collection (if applicable), chemotherapy and recovery of their white count, approximately six weeks. Outcomes included functional performance, fatigue, cardiopulmonary status and muscular strength. Any baseline differences in the groups were controlled for in the analysis. Compared to the general health education group, the intervention group showed a significant improvement on functional performance (p=.041), fatigue (p=.041), cardiopulmonary status (p=.001) and one measure of muscular strength (p<.001). Intention to exercise and perceived behavioral control explained 20% and 25% of the variance in exercise behavior. This study provides support that an exercise program during transplant can improve function, fatigue, cardiopulmonary status and strength. Intention to exercise and a belief that an exercise program is under their control contributes to exercise adherence. Nursing plays a key role in impacting these predictors and coaching stem cell transplant patients to achieve improved functional outcomes.

1423149

### **EVIDENCE-BASED GUIDELINES FOR BASIC ORAL CARE DURING CANCER THERAPY.**

Deborah McGuire, PhD, RN, University of Maryland, Baltimore, MD; Janet Fulton, PhD, RN, University of Indiana, Indianapolis, IN; Carlton Brown, PhD, RN, Memorial Sloan-Kettering Cancer Center, New York, NY; Elvira Correa, DDS, PhD, Hematology and Blood Transfusion Center, Campinas, Brazil; June Eilers, PhD, RN, Nebraska Medical Center, Omaha, NE; Faith Gibson, PhD, RN, London South Bank University, London, United Kingdom; Loree Oberle-Edwards, PhD, RN, Scripps Center for Dental Care, La Jolla, CA

**Underwriting/Funding Source:** Helsinn Healthcare, SA and BioAlliance Pharma

**Objective:** To present updated evidence-based practice guidelines for basic oral care of mucositis in cancer patients receiving radiotherapy or chemotherapy

Mucositis is a prominent and clinically significant toxicity of radiotherapy and chemotherapy in many cancer patient populations. Management is often guided by clinician or institutional preference and tradition rather than by evidence. The Multinational Association for Supportive Care in Cancer/International Society of Oral Oncology interdisciplinary Mucositis Study Group (MSG) developed evidence-based guidelines for managing mucositis in 2004 and updated them in 2012. The purpose of this project, conducted by the Basic Oral Care Section (BOCS) of the MSG, was to evaluate research in oral care protocols and mouth rinses and formulate evidence-based practice guidelines for managing cancer treatment-related mucositis. Inclusion/exclusion criteria to assess Medline literature to 2011 yielded 75 research articles. Each article was assigned to two BOCS members trained and calibrated in Hadorn et al.'s schema for rating levels of evidence. They independently assessed each article for major and minor flaws and determined levels of evidence; BOCS co-leaders reviewed levels and resolved discrepancies. Seven

types of interventions were appraised by treatment population (e.g., radiotherapy) and ability to prevent/treat mucositis: oral care protocols, dental oral care, normal saline, sodium bicarbonate, mixed medication mouthwashes, chlorhexidine, and calcium phosphate. BOCS co-leaders determined overall levels of evidence for each intervention and formulated one of three guidelines: recommendation, suggestion, or no guideline possible due to insufficient and/or conflicting evidence. Eight guidelines resulted: two suggestions for interventions (oral care protocols, dental oral care), one suggestion against an intervention in a specific treatment population (chlorhexidine), two no guidelines possible but with acknowledgment that they might be helpful, and three no guidelines possible. The guidelines provide an evidence-based framework for clinicians to use proactively in providing basic oral care to patients with mucositis. Additional research on these interventions is needed in order to improve the amount and quality of evidence for future clinical care.

### 1423153

#### **PERSONALIZATION OF THE DISTRESS THERMOMETER IN LEUKEMIA AND BREAST CANCER SURVIVORS.**

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**Underwriting/Funding Source:** National Comprehensive Cancer Network, Young Investigator's Award

**Objective:** To utilize a generic instrument for two diverse populations and provide a means for patients to personalize the instrument to self and disease.

Distress is a psychological state that may be exacerbated by physical symptoms, interpersonal challenges, psychological symptoms, social issues, and existential concerns. Prolonged exposure to distress can have a negative effect on quality of life and a host of physical manifestations. The purpose of this study was to examine the level and source of distress as experienced by leukemia and breast cancer survivors in early survivorship. A secondary purpose was to examine the utilization of the instrument and the ability to personalize it to self and disease with the addition of two narrative items. The Kornblith vulnerability model of psychosocial adaptation of cancer survivors suggests that psychological, vocational, sexual, and social adaptation to cancer and its treatment is influenced by a host of mediating variables, medical management, and psychosocial interventions. Mediating variables such as patient communication with the oncology providers may have a positive effect, as demonstrated by two additional items on the DT. Phase I of the study was a multi-group, cross-sectional design to study leukemia and breast cancer survivors, specifically reports of the level and source of distress, disease site differences, trajectory of survivors' level and source of distress in early survivorship, and gender differences. Correlative analyses were conducted using chi-square tests to compare groups and time with the frequency of endorsements of each of the problems on the 38-item listing. When the number of 'yes' responses was small, Fisher's exact test was used. Thematic analyses were used to examine the top three causes of distress and bothersome symptoms. Descriptive statistics were used to summarize this data with frequencies of matched items to the 38-item DT list. Of interest were the emergence of disease-specific themes, such as financial status and reported symptoms that were absent from the list. The addition of two narrative items enables patients to personalize the generic distress thermometer to their specific cancer, as well as their own personal needs. The insertion of two items to the DT retains its brevity yet expands its possibilities.

### 1423159

#### **ADVANCED PRACTICE NURSE-ADMINISTERED LOW LEVEL LASER TREATMENT FOR BREAST CANCER-RELATED LYMPHEDEMA.**

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**Underwriting/Funding Source:** ONS Foundation Endowment

**Objective:** To describe the potential benefits of APN-administered LLLT as a treatment modality for breast cancer related lymphedema.

Complete Decongestive Therapy (CDT) with Manual Lymphatic Drainage (MLD) is the gold standard for treating breast cancer-related lymphedema (BCRLE). Historically, lymphedema-certified oncology nurses provided and billed for this treatment. Successful attempts have been made to restrict CDT reimbursement to physical therapists who may not have lymphedema certification; prohibiting lymphedema-certified oncology nurses from providing lymphedema treatment and decreasing access to quality care. Low Level Laser Therapy (LLLT) is approved for BCRLE treatment. Few studies of LLLT as a lymphedema treatment modality exist. LLLT offers oncology nurses, particularly Advanced Practice Nurses (APNs) who can bill for services, an opportunity to treat BCRLE and improve care. This study examined the impact of APN administered LLLT, as an alternative or complementary treatment to MLD, on arm volume, symptoms, and quality of life (qol). LLLT stimulates lymphatic motricity, lymphangiogenesis, macrophage activity, and softening of fibrotic tissues facilitating lymph transport. This should reduce swelling and improve symptoms. We conducted a three group, pilot, randomized clinical trial of 46 patients with BCRLE. Treatments were administered by a lymphedema-certified APN. Group 1 received 40 minutes of MLD; Group 2: 20 minutes of LLLT; and, Group 3: 20 minutes of both MLD and LLLT. Compression bandaging was applied following every treatment. Valid and reliable instruments were used to collect pre and post-treatment data. Analytical techniques included: Chi-square, ANOVA, & Kruskal-Wallis Test. This study challenged existing beliefs that CDT is the "best" BCRLE treatment modality, and that it is "best" provided by physical therapists. No baseline group differences in demographic or medical variables were noted except greater rural representation in Group 1. All groups achieved statistically significant reductions in volume and in some symptoms; qol was unchanged. There were trends towards steeper volume reduction and improved skin and function in the LLLT only group. LLLT, which takes one-half the amount of time to administer, was as effective as standard therapy; and trends supported LLLT over standard care. It may be possible to reduce treatment cost and burden through use of APN-administered LLLT. Further research in a larger trial is indicated.

### 1423201

#### **PATIENT-RELATED FACTORS ASSOCIATED WITH NON-ADHERENCE TO HORMONAL THERAPY IN WOMEN WITH EARLY STAGE BREAST CANCER.**

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University of Pittsburgh, Pittsburgh, PA; Catherine M. Bender, PhD, RN, FAAN, University of Pittsburgh, Pittsburgh, PA

**Underwriting/Funding Source:** ONS Foundation through an unrestricted grant from GlaxoSmithKline

**Objective:** To investigate pre-hormonal therapy patient-related factors that predict nonadherence to therapy in women with breast cancer.

Adherence to oral hormonal therapy among women with breast cancer is critical to delaying disease recurrence and reducing mortality. Little is known about which patient-related factors are associated with nonadherence to hormonal therapy in women with breast cancer or whether certain women are at greater risk for nonadherence. The purpose of this study is to examine which pre-therapy patient-related factors predict nonadherence to hormonal therapy over 18 months in women with breast cancer. This study is guided by Christensen's Interactionist Framework of Adherence. We recruited 91 women with hormone-receptor positive early stage breast cancer to participate in a prospective, longitudinal study. Patient-related factors included depression (Beck Depression Inventory II), anxiety (Profile of Mood States Tension/Anxiety) and physical functioning (Medical Outcome Study Short Form-36) and were measured prior to beginning hormonal therapy. Nonadherence was measured continuously over 18 months via electronic event monitoring, yielding the percentage of prescribed doses taken and the percentage of days with correct intake. Data were analyzed using regression modeling. Participants were 56.7 years of age on average (SD=9.7), mostly white (96.7%) and well educated (Mean=14.9 years, SD=2.6). Participants were not depressed (Mean=5.7, SD=4.9) or anxious (Mean=7.4, SD=5.4). The percentage of prescribed doses taken ( $b=0.5357$ ,  $p=.003$ ) and the percentage of days with correct intake ( $b=-.6017$ ,  $p=.0009$ ) declined linearly over time. Higher pre-therapy levels of depression ( $p=.0008$ ) and anxiety ( $p=.02$ ), and poorer physical functioning ( $p=.03$ ) were associated with a lower percentage of prescribed doses taken. Higher pre-therapy levels of depression ( $p<.0001$ ) and anxiety ( $p=.0005$ ), and poorer physical functioning ( $p=.05$ ) were associated with a lower percentage of days with correct intake. Women who will receive adjuvant hormonal therapy for breast cancer who experience depression, anxiety or poor physical functioning at pretreatment are at risk of nonadherence to prescribed therapy over time. Findings can inform the development of interventions to promote adherence to hormonal therapy in women with breast cancer.

#### 1423247

**FATIGUE AND CARNITINE LEVELS OVER EIGHT CYCLES OF CHEMOTHERAPY IN CHILDREN AND ADOLESCENTS.** Mary C. Hooke, PhD, RN, University of Minnesota, Minneapolis, MN, and Children's Hospitals and Clinics of Minnesota, Minneapolis, MN; Marilyn J. Hockenberry, PhD, RN, FAAN, Duke University, Durham, NC; Kathy McCarthy, BSN, RN, Texas Children's Hospital, Houston, TX; Olga A. Taylor, MPH, Texas Children's Hospital, Houston, TX

**Underwriting/Funding Source:** Alex's Lemonade Stand Foundation

**Objective:** Discuss the relationship between carnitine levels and fatigue in children with cancer

Fatigue in childhood cancer is a pervasive and distressing symptom described as a "lack of energy." Carnitine is a micro-nutrient used to transport long chain fatty acids into muscle mitochondria. The chemotherapy drugs, ifosfamide, cisplatin, or doxorubicin, interfere with the carnitine network. Both carnitine and fatigue relate to physical energy and may be influenced by chemotherapy. Using a repeated measures design, change in carnitine and fatigue levels were examined during the first 8

cycles of chemotherapy in childhood cancer patients receiving ifosfamide, cisplatin, or doxorubicin. The influence of carnitine levels on fatigue was evaluated. An adaptation of the Symptoms Experience Model guided this study. This framework identifies factors that influence the individual's symptom experiences during treatment for cancer. Fifty-eight patients, between ages 3 and 18 years, within two months from diagnosis and receiving cisplatin, doxorubicin, and/or ifosfamide chemotherapy, participated. There were 38 males and 20 females; 13 subjects were < 7 years, 31 children were ages 7 to 12 and 14 adolescents were ages 13 to 18. Thirty-four subjects had solid tumors and 24 had leukemia or lymphoma. Fifty subjects received either one or two of the three drugs, and 8 received all three drugs. Measurements were between day 15 and 29 of the 2nd, 4th, 6th, and 8th cycles of chemotherapy and included carnitine plasma levels and self-reported fatigue using established child or adolescent fatigue scales. The Parent Fatigue Scale was used for children under age 7. Change in carnitine and fatigue was assessed using one-way ANOVA. Pearson correlation coefficients were calculated to assess the relationship between carnitine and fatigue. Differences between the drug groups over time were tested using linear mixed model. Total carnitine levels did not change significantly for the group. Significant differences in total carnitine levels were found between the sub-group of patients who receive 1 or 2 of the chemotherapy drugs versus all three ( $p=0.044$ ) with higher levels in 3 drug group at the last measurement. Fatigue decreased significantly in children age 7 to 12 ( $p=.04$ ). Relationships between fatigue and carnitine were not significant. Carnitine did not decrease during cancer treatment and did not influence fatigue levels in children undergoing cancer treatment. School-age children appeared to develop resilience to fatigue over the trajectory of chemotherapy treatment.

#### 1423292

**THE ONCOLOGY QUALITY COLLABORATIVE—USE OF A COMMUNITY OF PRACTICE MODEL TO FACILITATE EVIDENCE-BASED QUALITY IMPROVEMENT EFFORTS TARGETED TO A SET OF BREAST CANCER CARE FOCUSED PERFORMANCE MEASURES.** Kristen Fessele, RN, MSN, ANP-BC, AOCN®, Oncology Nursing Society, Pittsburgh, PA

**Underwriting/Funding Source:** ONS Foundation through an unrestricted grant from the Breast Cancer Fund of the National Philanthropic Trust

**Objective:** Describe the structure and purpose of the Oncology Quality Collaborative (OQC), a Community of Practice (CoP) comprised of past participants in the Oncology Nursing Society Foundation's (ONSF) Breast Cancer Care quality measures (BCCQM) testing project.

Oncology nurses are increasingly involved in quality measurement work as a result of healthcare reform efforts, and are tasked with the implementation of evidence-based, patient-centered practice improvements when gaps in care are uncovered. ONS is uniquely positioned to provide a forum to allow nurses to communicate concerns and share best practices towards a common goal. Wenger's CoP model proposes convening professionals in similar roles to discuss mutual areas of concern and promote shared learning. The ONSF BCCQM pilot-tested measures for reliability and validity focused on the quality of symptom assessment and management for patients receiving intravenous chemotherapy for breast cancer. At the project conclusion, a number of sites indicated dissatisfaction with their measure scores, and voiced a desire for an opportunity to implement practice changes, but were unsure where to focus efforts. Using a ranking exercise, fatigue, psychosocial distress and sleep-wake disturbance assessment and interventions and exercise recommendations were selected as topic areas for the OQC to focus on, with intent to recollect these BCC measures and illustrate score improvement. An in-person

meeting in December 2011 brought together participants from national BCCQM sites for rapport building, presentations by expert speakers and initial discussions. Monthly conference calls are held to allow continued sharing of challenges, efforts, tools and best practices as participants implement practice changes. The selected BCCQM will be re-collected in fall 2012 to evaluate incremental performance improvements, and a second in-person meeting is planned in November 2012 to allow participants to more formally present progress to date. The primary evaluation method for the OQC is re-collection of BCCQM, with anticipated increases in measure scores post-participation. Additional qualitative methods to assess the value and outcome of participation are in development. Use of a CoP model is well suited to facilitate practice change focused on improvement of specific, validated quality measures among oncology nurses. Availability of tested BCCQM allows objective assessment of performance improvements.

### 1423337

**COMPREHENSIVE ONCOLOGY PATHWAYS: DRIVING EVIDENCE BASED MEDICINE ACROSS THE CONTINUUM OF CARE.** Kathleen Lokay, BBA, Via Oncology Pathways, Pittsburgh, PA, and UPMC Cancer Center, Pittsburgh, PA

**Objective:** To understand how a comprehensive oncology pathways program provides the foundation for the emerging accountable care landscape and the drive to improve quality and reduce the cost of care.

A comprehensive oncology pathways program supports the nursing goals of clarity and standardization of physician orders as well as the benefits of prioritizing treatment options to those that improve efficacy and reduce toxicities. Such standardization provides better opportunities for consistent patient teaching and side effect management. The purpose of oncology pathways is to improve the value of cancer care (outcomes+quality divided by cost) by driving not only to evidence based care but prioritizing those options that have proven efficacy data or, in the absence of superiority data, reduced toxicities or costs. Solutions such as pathways are needed in cancer care due to the unsustainable escalation of costs and the increasing complexity of the treatment and management in the era of personalized medicine. The UPMC experience with the Via Oncology Pathways has been in place for over 6 years with longitudinal adherence data by disease and retrospective claims analysis demonstrating a reduction in the cost growth rate compared to non-pathways practices. Oncologists, mid level practitioners and oncology nurses utilize a decision support tool at the point of care that is patient specific and web-based, resulting in measurable performance metrics by physician and practice as well as by disease. Such content is developed and maintained on a quarterly basis by a combination of academic and community based oncologists from around the country using a hierarchy of efficacy, toxicity and, if all else is comparable, cost to the patient and payer. Outcomes from this project include reduced hospitalizations based on payer claims data as well as internally reported positive impacts on medical error rates. Oncology nurses will benefit from a deeper understanding of the potential for improving patient outcomes and quality of life through the adoption of oncology pathways within their practice setting. Such a program has the potential to improve the standardization of patient teaching and symptom management but also reduced medical errors through more streamlined regimen selection.

### 1423380

**SEROTONIN TRANSPORT GENE POLYMORPHISMS AND NAUSEA AND VOMITING IN WOMEN WITH BREAST CANCER FOLLOWING SURGERY AND BEFORE ADJUVANT THERAPY.** Susan W. Wesmiller, PhD, RN, University

of Pittsburgh, Pittsburgh, PA; Catherine M. Bender, PhD, RN, FAAN, University of Pittsburgh, Pittsburgh, PA; Susan Sereika, PhD, University of Pittsburgh, Pittsburgh, PA; Yvette P. Conley, PhD, University of Pittsburgh, Pittsburgh, PA

**Underwriting/Funding Source:** ONS Foundation through an unrestricted grant from Genentech, Inc., NCI RO-1CA107408, T32NRO11972A

**Objective:** Be able to describe the association of variability of the serotonin transporter gene (SERT) and symptoms of nausea and vomiting post-surgery in women with breast cancer.

Multiple studies have shown that breast cancer surgery is associated with significant postoperative nausea and vomiting (PONV). It is not clear why some patients respond well to antiemetics and others do not. Understanding genetic variability in the mechanisms underlying nausea and vomiting will increase understanding of the variability in response to antiemetics and lead to strategies to prevent PONV and post discharge nausea and vomiting (PDNV). The purpose of this study is to explore the association of polymorphisms of the SERT promoter region with nausea and vomiting experienced after surgery but before adjuvant therapy in women with breast cancer. Serotonin receptor genes are hypothesized to play a role in PONV, and are known to be associated with chemotherapy-induced nausea and vomiting. The SERT is a critical element of the regulation of the serotonin system function and thus an excellent candidate for association with PONV. Greater distress has also been shown to predict PONV. Nausea and vomiting was assessed with items from the Breast Cancer Prevention Trial Symptom Checklist in 81 postmenopausal women with breast cancer 29 days after surgery and before adjuvant therapy. Distress was measured using the tension-anxiety subscale of the Profile of Mood States. DNA was extracted from blood or saliva samples. Based on SERT Tri-allelic genotype, subjects were classified as having low (Sa/Sa, Sa/Lg), intermediate (Sa/La, La/Lg) or high (La/La) serotonin transporter activity. Data analysis included descriptive statistics and Chi Square tests. 27 (33%) subjects were classified as having high, 33 (40 %) intermediate and 21 (26%) low serotonin activity genotypes. More women (30%) classified as high reported PDNV compared to only 19% of women with low serotonin transport activity (OR=.54). Women with PDNV had higher distress scores (9.9 + 6.4) compared to women without N/V (8.3 + 5.1), (p=.24). The results of this pilot study provide support for further examination of the association of PONV and variability of genes of the serotonin pathway and pre-operative distress.

### 1423432

**IMPROVING THE TIMELINESS OF COMMUNICATING RESPIRATORY SYNCYTIAL VIRUS RESULTS TO CLINICIANS THROUGH THE INNOVATIVE USE OF TECHNOLOGY.** Blanca Vasquez-Clarfield, RN, MA, CNML, OCN®, Memorial Sloan-Kettering Cancer Center, New York, NY; Reshma Nevrekar, Memorial Sloan-Kettering Cancer Center, New York, NY; Janet Eagan, RN, MPH, CIC, Memorial Sloan-Kettering Cancer Center, New York, NY; Kent Sepkowitz, MD, Memorial Sloan-Kettering Cancer Center, New York, NY; Susan Robbins, RN, MSN, Memorial Sloan-Kettering Cancer Center, New York, NY; Mary Dowling, RN, MSN, CENP, OCN®, Memorial Sloan-Kettering Cancer Center, New York, NY

**Objective:** To improve timely communication using computer generated text messages sent to clinicians of oncology patients with positive RSV results that require isolation.

In this NCI-designated comprehensive cancer center, cases of Respiratory Syncytial Virus (RSV) have doubled in the last

two years due to increased incidence in the community. The oncology population is at increased risk for contracting RSV, and the virus is highly contagious. As patients become symptomatic, they were cultured and placed on isolation for three days without confirmed results. To reduce this timeframe, the cancer center recently adopted an FDA approved laboratory test, Film Array® Respiratory Panel, resulting in a RSV identification turnaround time of three hours. The three-hour turnaround time allows not isolating patients symptomatic for RSV; and therefore, avoids utilizing isolation rooms, which are a limited resource. To further expedite communication of RSV results, a method for immediate clinician notification was explored. Since RN's wear Vocera® Communication System badges to communicate with other staff members via voice messaging, this device was the logical choice to send text messages. In collaboration with the Information Systems team, Infectious Disease Service and the Microbiology Laboratory staff a Medical Logic Module (MLM) was developed that is triggered to send an email to the attending physician and a text message to the Charge RN's Vocera® badge when a positive RSV result is posted by the laboratory. This innovation streamlined the communication of a critical lab result to the oncologic clinicians at the point-of-care to allow only isolating patients positive for RSV or other community respiratory viruses. Technological advances that facilitate communication of abnormal lab results to oncologic clinicians can significantly impact the timeliness of treatment, patient flow and staff efficiency.

### 1423465

**AUTOMATION OF THE PRESSURE ULCER PREVALENCE SURVEY TO IMPROVE MANAGEMENT OF PRESSURE ULCERS IN ONCOLOGY SETTINGS.** MaryAnn Connor, RN, MSN, CPHIMS, Memorial Sloan-Kettering Cancer Center, New York, NY; HyunJoo Lee, RN, MSN, Memorial Sloan-Kettering Cancer Center, New York, NY; Elizabeth Grahm, RN, MSN, Memorial Sloan-Kettering Cancer Center, New York, NY; Judy Graham, RN, MSN, Memorial Sloan-Kettering Cancer Center, New York, NY

**Objective:** Describe clinical benefits of using an automated pressure ulcer database in the oncology patient population.

Risk factors such as suboptimal nutrition, fatigue, and immunosuppression in patients with cancer provide the ideal environment for skin breakdown. Prevalence and incidence remain high across all health settings, including oncology settings, costs are in terms of human suffering and health care dollars. Pressure ulcers represent a major quality indicator of nursing care and are now under the close watch of many regulatory agencies. In addition to the adverse impact on clinical outcomes, the cost of treating pressure ulcers is a large burden on our health care system. This major metropolitan comprehensive cancer center participates in benchmarking pressure ulcer prevalence with NDNQI, the only national database of nursing sensitive quality indicators that contains pressure ulcer data collected at the nursing unit level. Data are used for quality-improvement purposes and to determine annual national benchmarks with other academic medical centers hospitals and also NCI designated organizations. Prior to our successful technological changes, the whole process had to be done manually. The nursing teams expressed the need to do the following: automate the processes of collecting and reporting pressure ulcer survey data; streamline and standardize the dataflow; eliminate redundant data collection; reduce cost and time; extract and utilize the data in a timely manner and improve user satisfaction. Working collaboratively, the divisions of Nursing Informatics, Nursing Quality Management and Information Systems reviewed the identified issues and automated the dataflow. We utilized multiple technological tools. This presenta-

tion will demonstrate technological advances for nursing quality outcomes measurement seen by this automation. Benefits described will be ease of data accessibility, standardization of required data fields; ability to query and calculate information; and exportability to other programs for analysis. The Team were able to identify the following clinical indicators relevant to the oncology patient population: improved decision support by faster extracting/utilizing of pressure ulcer data; improved internal and external quality reporting; and efficient evaluation of current treatment protocols on nursing units. The following Clinical Benefits were realized after the implementation of the automated pressure ulcer prevalence database: Identification of hospital-wide and unit pressure ulcer specific patterns in the oncology patient population. Interventions in real time with a decrease in pressure ulcer prevalence. Efficient evaluation of current treatment protocols on nursing units

### 1423508

**FINANCIAL EFFECTS OF MULTIPLE MYELOMA TREATMENT: IT'S MORE THAT JUST THE COST OF CHEMOTHERAPY.** Julia A. Goodwin, PhD, RN, University of Arkansas for Medical Sciences, Little Rock, AR; Ellen Sullivan, MNsc, ACNP-BC, OCN®, Celgene Corporation, Little Rock, AR; Carol A. Enderlin, PhD, RN, University of Arkansas for Medical Sciences, Little Rock, AR; Elizabeth A. Coleman, PhD, RN, University of Arkansas for Medical Sciences, Little Rock, AR; Robin Easley, MNsc, ACNP-BC, OCN®, Tripler Army Medical Center, Honolulu, HI

**Underwriting/Funding Source:** National Institute for Nursing Research, P20 NR009006

**Objective:** We conducted this study to illuminate an important aspect of cancer survivorship: the personal financial effects patients experience with multiple myeloma and its treatment.

Multiple myeloma (MM) is a form of plasma cell cancer without a definitive cure but treatments are now prolonging survival. Many patients live with MM as a chronic disease; therefore, the costs of treatment may continue for years or even decades. Treatment for MM is complex and costly, even with health/medical insurance coverage and the costs extend beyond the price of chemotherapy or other treatments. The purpose of this study was to identify MM treatment effects on patients' personal finances: employment, disability, retirement, health/medical and life insurance, and out-of-pocket expenses. This study focused on personal financial effects related to cancer and its treatment, an aspect of cancer survivorship as described in A National Action Plan for Cancer Survivorship: Advancing Public Health Strategies (2004). We mailed a questionnaire about financial issues to 1015 patients with MM treated at the study site, including a pilot test for 12 patients. Data analysis included descriptive statistics and comparisons using independent t-tests. Our sample (n=762; mean age 61, SD 9.26), reported problems with maintaining employment because of pain, fatigue, or other difficulties. Many sought either disability or retirement benefits and then changed or lost their insurance coverage. Out-of-pocket costs were challenges for many patients, especially when traveling outside their local areas to access treatment. Participants' narrative comments described the burdens they experienced related to out of pocket costs that depleted life savings and/or college funds and required hard choices (i.e. medicines vs. food), and even loss of the family home. In addition to assessing for treatment toxicities, health care providers must also assess patients' personal financial needs. Only then can we intervene with actions such as referrals to pharmaceutical company patient assistance programs, social workers, rehabilitation therapists, or other health care professions to help patients decrease the personal financial effects of MM and its treatment.



1423517

# **QUALITY ADVISERS AND ADVOCATES—SURVIVORS NEED BOTH.** Kelly Kish, RN, MS, AOCN®, Oncology Convergence, Inc., Tempe, AZ

**Underwriting/Funding Source Name:** Oncology Convergence, Inc.

**Objective:** The reader of this abstract will be able to verbalize resources provided to medical oncology staff, patients and their caregivers via two new innovative software applications: OncoAdviser and AdvocacyAdviser.

OncoAdviser was developed as a single online source to provide the multitude of resources required for cancer center staff and patients undergoing cancer treatment. The purpose of the project was to bring together tools required by both medical and radiation oncology front office and clinical staff to assist patients through the financial aspects of undergoing cancer treatment. Physicians, nurses, pharmacists, and financial counselors are required to work closely together to coordinate the best treatment plan for the cancer patient, and then assist them with navigation through the health care system to assure appropriate insurance and/or financial coverage. Typically these resources are spread throughout different departments, multiple manuals, and software applications and internet resources. A program that could bring these resources to one application could streamline efficiencies and provide concrete information and valuable patient resources to the cancer patient. Oncology specific financial counselors were the target job type in a large oncology specific consulting and billing company. A software application was developed to assist internal staff working with cancer patients to: develop a cost of treatment for the patients specific plan of care; access pharmaceutical assistance programs; access billing and coding guidelines; access patient education tools; reference drug information such as NDC's, dosing guidelines and related information; cross-walk ICD9 codes to ICD10; access current available research protocols. The application improved the efficiency of the financial counselor, and was also utilized by coders, accounts receivable and executive operational staff as well. Functionality was added to the program to be able to analyze cost/expense data related to specific chemotherapy regimens and/or radiation treatment plans to the institution. The application is now currently is use in academic cancer centers, hospital owned practices, and private practice. The benefits realized by OncoAdviser have led to the current development of AdvocacyAdviser, an online application specifically for the cancer survivor and caregivers that provides direct access to resources, services and education.

1423804

# **TAILORING MINDFULNESS-BASED INTERVENTIONS FOR LUNG CANCER PATIENTS RECEIVING TREATMENT.** Rebecca H. Lehto, RN, PhD, OCN®, Michigan State University, East Lansing, MI; Gwen Wyatt, RN, PhD, Michigan State University, East Lansing, MI; John Sturtevant, MS, Allegiance Health, Jackson, MI

**Objective:** The study objective was to obtain lung cancer patient's perceptions of a mindfulness-based intervention to use in designing a randomized clinical trial.

Developing effective supportive interventions that modify the psychological and physical symptom burden imposed by the disease and treatment, and improve health-related quality of life (HRQOL) in patients with lung cancer are a major public health concern. However, patients with lung cancer who are in active treatment have lowered participation in intervention studies. One promising approach to symptom management is an 8-week mindfulness-based intervention, which incorporates meditation, breathing, and gentle yoga exercises to enhance

patients' capacity to self-regulate symptoms and to adapt to serious stressors. Mindfulness-based interventions require few resources to implement, but have not been systematically tested with lung cancer patients. Therefore, the purpose of the focus group study was to gain patient input in the development of a targeted protocol. A HRQOL approach for symptom management was adapted; research questions to meet the aims of the qualitative study were developed. 11 participants (mean age 69.6 + 8.49; range 51-79 years; 6 women, 5 men) with non-small cell lung cancer participated in audio taped focus groups. Qualitative methods recommended by Kruger were used. Three primary themes emerged from the qualitative content analysis: 1) awareness and interest; 2) perceived barriers and benefits; and 3) adaptations recommended for use with lung cancer patients. Specific perceptions included the importance of targeting key symptoms such as dyspnea, worry and insomnia; whereas, patient recommendations also pointed out the need for a shorter duration than the standard 8-week protocol, and a home-based approach for greater accessibility. Research design of mindfulness-based intervention protocols must consider the unique characteristics of this vulnerable group, such as targeting specific symptoms, modifying the protocol length, and offering a home-based therapy. Taking into account the key symptoms and recommended adaptations, mindfulness-based interventions should be tested with lung cancer samples for potential translation to practice. Mindfulness-based interventions carry the possibility of being a supportive resource that patients can use with potential application to a broad range of settings.

1423817

# **IDENTIFYING SYMPTOM CLUSTERS IN PATIENTS WITH HEAD AND NECK CANCER POST CONCURRENT CHEMORADIO THERAPY.** Canhua Xiao, PhD, RN, Emory University, Atlanta, GA; Alexandra Hanlon, PhD, University of Pennsylvania, Philadelphia, PA; Qiang Zhang, PhD, Radiation Therapy Oncology Group, Philadelphia, PA; Kian Ang, MD, PhD, University of Texas, Houston, TX; David I. Rosenthal, MD, University of Texas, Houston, TX; Deborah W. Bruner, RN, PhD, FAAN, Emory University, Atlanta, GA

**Underwriting/Funding Source:** American Nursing Foundation

**Objective:** The learning objectives are to present the findings to nurses and researchers, and to learn new perspectives from colleagues through discussion on this or other related topics.

The proposed study addressed gaps in the literature resulting from the current paucity of the research in symptom clusters for patients with head and neck cancer (HNC). Patients with HNC experience multiple concurrent treatment-related symptoms; however, there are no published studies about symptom clusters in HNC patients. This study is to identify symptom clusters and the generalizability of identified clusters over time and in different subsamples for HNC patients post chemoradiotherapy. Symptoms that are related to each other are grouped together as a cluster, which has synergistic effects on patients' quality of life, compared with single symptoms. A secondary data analysis with 684 HNC patients receiving combined chemoradiation was used to examine clusters. Symptoms were measured by clinicians at three time-points (T1: the end of the first cycle of chemotherapy; T2: the end of the second cycle of chemotherapy; T3: three months after the start of radiotherapy) using the National Cancer Institute Common Toxicity Criteria v2.0. Exploratory factor analysis was applied to identify symptom clusters, which was further verified by confirmatory factor analysis. Coefficients of congruence and alpha coefficients were employed to examine generalizability of cluster structures over different time-points and in different subgroups. Two clusters were identified.

tified: the HNC specific cluster and the gastrointestinal cluster. The HNC specific cluster was composed of radiodermatitis, dysphagia, radiomucositis, dry mouth, pain, taste disturbance, and fatigue. The gastrointestinal cluster involved nausea, vomiting, and dehydration. With the exception of patients 65 years old or older, diagnosed with larynx cancer, or with stage III cancer, the two clusters were generalizable to different subgroups defined by age, gender, race, education, marriage, histories of tobacco use, treatments, primary sites, disease stages, and tube feedings, as well as to three symptom assessment time-points. These findings may serve to inform the assessment, prevention, and management of multiple symptoms in clinical practice. Moreover, the findings necessitate future research to understand the underlying mechanism.

#### 1423914

**UPTAKE OF RISK REDUCING SURGERY IN BRCA1/2 MUTATION CARRIERS UNDERGOING CANCER SCREENING: UNDERSTANDING DECISION-MAKING USING THE MIDDLE RANGE THEORY OF TRANSITION.** Jennifer T. Loud, CRNP, DNP, National Cancer Institute, Rockville, MD; David Portnoy, PhD, MPH, National Cancer Institute, Rockville, MD; Paul Han, MD, MA, MPH, National Cancer Institute, Rockville, MD; Mark H. Greene, MD, National Cancer Institute, Rockville, MD

**Underwriting/Funding Source:** National Cancer Institute

**Objective:** To understand the factors associated with uptake of risk-reducing surgery (RRS) in BRCA1/2 mutation carriers undergoing cancer screening.

BRCA1/2 mutation carriers have cumulative breast and ovarian cancer risks to age 70 of 45-65% and 11-39%, respectively. At the appropriate age, risk-reducing bilateral salpingo-oophorectomy (RRSO) and risk-reducing prophylactic mastectomy (RRBM) are recommended for cancer risk reduction. Here, we employ Transition Theory (TT) to identify the factors associated with uptake of RRS in BRCA1/2 mutation carriers, to clarify and support patient decision-making. Transition Theory defines the relationships among factors that shape the evolving process of adapting to changes in health or risk of disease, and may aid understanding an individual's decision to undergo RRSO and/or RRBM. The inter-related domains within TT define the Nature of Transitions (type, pattern and properties), Conditions (facilitators and inhibitors) and Patterns of Response (process and outcome indicators). Using questionnaires at baseline, 3 months and each annual visit, we examined the association between the uptake of RRS and patient variables within the conceptual framework of TT. We assessed general psychological distress (BSI-18, subscales: somatization  $\alpha = 0.58$ ; anxiety  $\alpha = 0.74$ ; depression  $\alpha = 0.77$ ) cancer risk perceptions, cancer-specific worry (modified Lerman's scale;  $\alpha = 0.75$ ) false-positive test results (FPTR) and other information within a TT conceptual framework in a sample of 170 BRCA1/2 mutation carriers (ages 22-55) followed prospectively for 4 years on a breast imaging protocol. Multiple logistic regression models were used to identify predictors of RRSO and/or RRBM versus no RRS. Results: FPTR did not influence the uptake of RRS. In regression analysis, cancer-specific worry (breast for RRBM; ovarian for RRSO) was the strongest predictor of surgery uptake (OR = 5.66, CI 1.71-18.79 for RRPBM and OR = 6.15 CI 1.12-33.96 for RRSO). Conclusions: Evaluating TT domain changes (Conditions: facilitators and inhibitors) identified the strongest factor (cancer-specific worry) significantly associated with the uptake of RRSO and RRPBM in BRCA1/2 mutation carriers. FPTRs did not correlate with choosing surgery, while cancer specific worry was strongly associated with that decision. Clinical interventions to support decision-making and areas for future research are considered.

#### 1424014

**SELF-MANAGEMENT OF SYMPTOMS EXPERIENCED IN LOW INCOME AFRICAN AMERICANS WITH ADVANCED CANCER.** Kate Yeager, RN, PhD, Emory University, Atlanta, GA

**Underwriting/Funding Source:** The American Cancer Society (Doctoral Scholarship in Cancer Nursing) and the National Institute of Health/National Institute of Nursing Research National Research Service Award (NIH/NINR F31NR011383)

**Objective:** This presentation will provide a rich description of symptom self-management strategies used by low income African Americans with advanced cancer.

Successful management strategies for cancer symptoms are crucial for daily function and satisfactory quality of life. Barriers to successful management may exist for those with limited financial resources. Symptom self-management strategies are done by individuals to relieve or control symptoms. Although many African Americans disproportionately experience advanced cancer, little is known about what they do to manage their symptoms. Also, the challenges of symptom management are amplified in persons with little financial resources. Therefore, the purpose of this qualitative descriptive study was to explore symptom self management strategies of low-income African American adults with advanced cancer living at home. Due to minimal research on this topic, a qualitative research paradigm was applied allowing for an inquiry that focused on the perspective of the participants. A purposive sample of 27 low-income individuals with advanced cancer, ranging in age from 30-79 years, participated in audiotaped semi-structured interviews conducted by two research interviewers. The majority of the sample was female (18) and the cancer diagnoses varied considerably with breast (9) and lung (8) the most common types represented. Data analysis involved content analysis with the constant comparison method, including axial coding. An audit trail provided transparency of procedures and data analysis decisions in order to demonstrate validity of the results. Participants described the management of multiple moderate to severe, distressful symptoms. The symptom self-management strategies were captured in two main themes: behavioral and spiritual coping. Behavioral coping included making frequent adjustments in complex medication regimens and lifestyle changes (mainly related to activities and diet), requiring ongoing self-monitoring. Spiritual coping included the use of faith and prayer and was described by almost all participants, while they were not directly asked about spirituality. Cancer and the distress of symptoms had taken over their lives, yet faith brought reassurance and comfort. Participants used prayer to solve personal problems and decrease symptoms. This study illustrates that low-income African Americans with advanced cancer have to negotiate distressful symptoms requiring multiple medications and multifaceted strategies. Information gained from this study can help guide research in symptom management and provide direction for oncology nurses working with this under-studied group.

#### 1424066

**ENHANCING PATIENT SAFETY BY INCORPORATING CLINICAL DECISION-MAKING BIASES INTO A NEW NURSE PRACTITIONER RESIDENCY.** Dennis Graham, NP, DNS(c), Memorial Sloan-Kettering Cancer Center, Arverne, NY; Maryanne Giuliani, NP, DNP, Memorial Sloan-Kettering Cancer Center, Arverne, NY; Jane Duffy-Weisser, NP, MS, Memorial Sloan-Kettering Cancer Center, Arverne, NY

**Objective:** To enhance patient safety by incorporating clinical decision-making biases training for new Oncology Nurses Practitioners.

A new paradigm is needed to help educate NPs at entry into oncology practice about clinical decision-making biases on pa-

tient safety and overall quality of care. Research supports the premise that improving understanding of cognitive biases in clinical decision making may improve patient safety and reduce errors. Nurse Practitioner (NP) programs have limited training in clinical decision making (CDM) and the cognitive processes leading to errors in diagnosis and treatment. A new paradigm is needed to help educate NPs at entry into practice about CDM biases on patient safety and overall quality of care. At our National Cancer Institute (NCI)-funded Cancer Center, an expert panel of experienced NPs and MDs will participate in multiple round table discussions to explore potential clinical decision biases that could lead to adverse patient events in each of our specialized oncologic clinical areas. These areas of potential CDM biases will be incorporated into a new NP Residency, replacing the traditional orientation model. The program will feature disease specific didactic lectures that look at potential areas of CDM biases identified by the expert panel. The effectiveness of incorporating CDM biases training into this new educational model will be evaluated by comparing readmission to hospital rates, NP adverse events, and length of stay of patients by admission diagnosis longitudinally following the implementation of this new model. Faculty for our NP residency will be comprised of experienced NPs and MDs and other clinical experts who have completed a training program in CDM biases. NPs need better training in CDM biases in order to avoid potential errors when enhancing patient safety programs and improving quality. More research is needed in the area of identifying CDM biases in oncology practice and training novice and experience NPs to identify them in order to improve care.

#### 1424095

**COMPUTER-TAILORED INTERVENTION INCREASES COLON CANCER SCREENING IN LOW-INCOME BLACK PRIMARY CARE PATIENTS: RESULTS OF A RANDOMIZED TRIAL.** Susan M. Rawl, PhD, RN, FAAN, Indiana University, Indianapolis, IN; Susan Perkins, PhD, Indiana University, Indianapolis, IN; Yan Tong, PhD, Indiana University, Indianapolis, IN; Shannon Christy, MA, Purdue University, Indianapolis, IN; Victoria L. Champion, PhD, RN, FAAN, Indiana University, Indianapolis, IN; Celette Sugg Skinner, PhD, University of Texas Southwestern Medical Center, Dallas, TX

**Underwriting/Funding Source:** National Cancer Institute Grant # 1R01 CA115983

**Objective:** To report results of a two-group randomized controlled trial conducted to test the efficacy of a computer tailored intervention to increase colorectal cancer screening rates among Black primary care patients. We compared intervention groups on rates of self-reported colorectal cancer screening and forward movement in stage of adoption at 6 months.

Incidence and mortality from colorectal cancer, the third most common cancer affecting men and women, can be reduced through regular screening. Some screening tests detect cancer early, while others prevent cancer through removal of adenomatous polyps. Black Americans have the highest CRC incidence and mortality rates compared to all racial/ethnic groups. Effective approaches to increase screening in this population are urgently needed. We hypothesized that differences between groups would be observed in proportions of participants who: 1) completed fecal occult blood tests (FOBT) or colonoscopy; and 2) had moved forward in stages of adoption for these tests. Health Belief Model and Transtheoretical Model of Behavior Change. Black primary care patients (n=595) who were not adherent to CRC screening guidelines were randomly assigned to either a computer-tailored CRC screening intervention (n=286) or a non-tailored CRC screening brochure (n=309).

Participants completed baseline and 6-month telephone interviews; interventions were delivered prior to primary care provider visits. Differences between groups were examined using chi-square tests. Among the computer-tailored group, the FOBT completion rate was 12.6% compared to 7.8% in the brochure group (p=0.05). The colonoscopy completion rate was 17.5% in the computer group vs. 15.2% in the brochure group (p=0.45). Forward stage movement for FOBT was observed in 28.4% of the computer groups vs. 20.8% in the brochure group (p=0.03). Forward stage movement for colonoscopy was 38.5% in the computer group and 36.8% (p=0.68) in each group, respectively. The computer-tailored intervention was more effective than the brochure at increasing FOBT completion and movement toward action. More research is needed to explain why the tailored intervention was not more effective at increasing colonoscopy completion rates and to identify moderators of intervention efficacy.

#### 1424221

**TRANSLATING RESEARCH AND EVIDENCE-BASED PRACTICE TO THE BEDSIDE NURSE VIA A VIRTUAL JOURNAL CLUB.** Catherine Jansen, AOCNS®, Kaiser Permanente, San Francisco, CA

**Objective:** To promote dissemination of research findings and evidence-based practice to staff nurses through the development of an accessible website with tools to facilitate learning.

Promotion of research and evidence based practice at the nursing unit level. Although the scope of oncology nursing research and evidence-based recommendations continue to increase, disseminating evidence to the point of care remains a challenge. Journal clubs have been promoted in several disciplines as a means to enhance the ability of those involved to critique the literature and translate findings into practice. However, common barriers reported by staff nurses are lack of time at the workplace, inability to accessing resources or research at home, difficulty in accessing, understanding, and synthesizing study findings. Therefore, the purposes of this project were to (1) develop an intranet based tool to provide convenient accessibility for staff to participate in a journal club; (2) solicit an environment of questioning best practices among staff (3) provide guidelines to critique the literature; and (4) ultimately promote dissemination of research findings and evidence-based practice to staff nurses. Staff were involved with the planning process through a specific needs assessment to determine their learning needs and interest in participating. Collaboration with the librarian was crucial to develop an intranet site that staff could assess from home that was password-protected and gave them complete access to pertinent full-text journal and books. Additionally staff were given guidelines on how to evaluate the article of the month. Continuing education was provided as an incentive if the participant read the article in its entirety, participated in the discussion board, completed a post-test with a minimum 80% passing score, and submit an evaluation. The discussion board, although led by the CNS, was geared towards staff commenting on the current topic and how it applied to their practice or whether practice should be changed in light of the discussion. This project was developed as a way to enhance the knowledge base of staff nurses and their ability to critique research as well as question their current practice. Initial feedback has been positive and staff on the various shifts are excited about the ability to participate at times convenient to them in the comfort of their home. Continued involvement will be tracked as well as staff participation in suggesting topics. Translating research and evidence-based practice to the bedside continues to be a challenge, but the use of a virtual journal club has the potential to overcome some of the barriers.



1424282

**NOT ON THE RADAR.** Karen Greco, PhD, RN, MN, ANP, University of Arizona, West Linn, OR; Barbara F. Piper, DNS(c), RN, AOCN®, FAAN, University of Arizona, Tucson, AZ

**Underwriting/Funding Source:** ONS Foundation through an unrestricted grant from Genentech, Inc.

**Objective:** Participants will be able to describe two strategies for facilitating colorectal cancer screening in high risk adults.

Colorectal cancer (CRC) is the third most common cancer in adults with 20% of cases occurring in those individuals who have a family history of the disease. Unfortunately, only half of adults over 50 years and 25 percent under 50 years who have a CRC family history undergo screening. Particularly troubling is the fact that while CRC incidence rates are declining in those at average risk, incidence rates are increasing in those younger than 50 years. Limited information exists about barriers that affect CRC screening in those at increased risk. Having a better understanding of CRC screening barriers and outcomes can facilitate interventions that promote guideline adherence in these individuals. Describe and explain CRC screening decision-making processes in those at increased colorectal cancer risk. Symbolic Interactionism. Qualitative design. Open-ended interviews using a semi-structured interview guide were conducted with 32 adults (ages 26-83) meeting National Comprehensive Cancer Network CRC increased risk criteria. Digitally recorded interviews were transcribed. Using grounded theory analysis and Nvivo software, validated emergent codes, themes and relationships were identified. Prior to diagnosis, CRC was “not on the radar,” due to a lack of risk factor awareness of and symptoms. Many believed that CRC happened only to older people; not to those under 50. CRC was described as the “hidden” cancer; embarrassing to talk about. Some providers gave false reassurance that the individual was too young to develop CRC. Men were less likely to undergo screening and to downplay “medical things”. Other factors assumed priority leading to screening delays. Taking time off from work and having to rely on someone else to drive them to and from the colonoscopy screening test was a barrier. CRC risk awareness or diagnosis often led to increased CRC screening advocacy for the individual, family, and community; and improved screening adherence. Participant recommendations to improve CRC educational strategies include: targeting those younger than 50; events and media frequented by males; and using social media. Study findings can be used to target interventions to improve CRC screening behaviors in those at increased risk.

1424298

**ILLNESS/TREATMENT FACTORS ASSOCIATED WITH ADHERENCE TO HORMONAL THERAPY IN WOMEN WITH EARLY STAGE BREAST CANCER.** Susan M. Sereika, PhD,

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**Underwriting/Funding Source:** ONS Foundation through an unrestricted grant from GlaxoSmithKline

**Objective:** To identify illness/treatment factors associated with adherence to hormonal therapy in women with early stage breast cancer.

Increasingly the treatment of breast cancer has shifted from systemic therapies delivered intravenously under the control of the clinician to oral systematic hormonal agents that are patient controlled. With this shift, nonadherence to hormonal therapy for breast cancer has become a growing concern. Little is known about the illness/treatment factors that predict medication adherence in women with breast cancer. We investigated medication adherence and its association with selected illness/treatment factors in women with breast cancer over the first 18 months of hormonal therapy. This research was guided by Christensen's Interactionalist Framework of Adherence. Using a prospective, repeated measures design, 91 women (97% white, aged 56.7±9.7 years) with early stage breast cancer (60% with stage 1 disease) were monitored up to 18 months for their adherence to hormonal therapy for breast cancer and selected illness/treatment factors. Adherence was measured continuously using electronic event monitoring summarized monthly as the percentage of prescribed doses taken (“doses” adherence) and the percentage of days with correct intake (“days” adherence). Illness/treatment factors included stage of disease, chemotherapy use, regimen complexity, number of comorbidities (via the Brief Comorbidity Questionnaire), impact of side effects of hormonal therapy (via the Breast Cancer Prevention Trial Symptom Inventory), and financial hardship (via the Measure of Financial Hardship and the Modified Collection of Indirect and Nonmedical Direct Costs). Random coefficient modeling was used to examine association between adherence and illness/treatment factors. Adherence declined linearly over time (doses adherence:  $b=-0.5357$ ,  $SE=0.1752$ ,  $t=-3.06$ ,  $p=.0030$ ; days adherence:  $b=-0.6017$ ,  $SE=0.1747$ ,  $t=-3.44$ ,  $p=.0009$ ) with initial levels of adherence being 98.7% and 96.0%, respectively. Nonadherence to hormonal therapy was associated greater perceived bother due to cognitive symptoms ( $p<.05$ ), musculoskeletal pain ( $p<.05$ ), weight concerns ( $p<.010$ ), and gynecological symptoms ( $p<.010$ ). Identification of the specific side effects that impact adherence is fundamental to the development of interventions to improve adherence to hormonal therapies.

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