# 2013 Oncology Nursing Society Connections: Advancing Care Through Science Abstracts

Abstracts appear as they were submitted and have not undergone editing or the *Oncology Nursing Forum*'s review process. If any errors or omissions have been made, please accept our apologies. Abstracts that are not being presented do not appear.



## C2-0054

### MOTIVATIONAL INTERVIEWING AND COGNITIVE BEHAVIORAL THERAPY TO PROMOTE ADHERENCE IN CANCER PATIENTS TAKING ORAL AGENT MEDICATIONS: AN INTEGRATIVE REVIEW.

Sandra Spoelstra, PhD, RN, College of Nursing, Michigan State University, East Lansing, MI; Ruth McCorkle, PhD, RN, FAAN, Yale University, School of Nursing and Epidemiology, New Haven, CT; Charles Given, PhD, Michigan State University, Family Medicine, East Lansing, MI; Kimberly Ridenour, Undergraduate Nurse Scholar, College of Nursing, Michigan State University, East Lansing, MI; Melissa Hilton, RN, College of Nursing, Michigan State University, East Lansing, MI; Monica Schueller, BA, College of Nursing, Michigan State University, East Lansing, MI; Barbara Given, PhD, RN, FAAN, College of Nursing, Michigan State University, East Lansing, MI

**Underwriting or Funding Source:** Walther Cancer Foundation, Indianapolis, Indiana.

**Poster Category:** Clinical Innovation

**Topic Significance and Study Purpose/Background/Rationale:** Chemotherapy treatment has shifted from intravenous to oral administration resulting in as much as one-third of the prescribed doses of oral anti-cancer agents required for treatment missed. This shift in treatment results in care at home, placing responsibility on patients. This review discusses the foundation for developing a combined motivational interviewing (MI) and brief cognitive behavioral therapy (CBT) intervention and examines evidence on MI/CBT interventions that improved adherence.

**Methods, Intervention and Analysis:** Whittemore and Knafl's review method was used, identifying studies via a search in CINAHL and PubMed using key words of MI/CBT; and reviewing of references.

**Findings and Interpretation:** 2822 MI and 48566 CBT articles were retrieved, with 206 on MI/CBT. 12 articles met inclusion criteria, and 9 report improved adherence. Total sample size was N=1386; with 4 RCTs, 5 clinical trials, 1 feasibility study, and 1 case study; including HIV/AIDS, rheumatoid arthritis, ulcerative colitis, osteoporosis, mental health disorders, Fanconi anemia, gambling, substance abuse, and weight loss. Interventions included: phone (3 to 5 calls, 7 to 11 minutes) and face-to-face or group settings interactions (1 to 28 sessions, 60 to 90 minutes). In most cases, a combination of written materials and delivery of the intervention by a clinician occurred. Clinicians used for delivery included RNs, PTs, OTs, and psychologists. Medication adherence (Effect Size 0.19 to 0.67), depression ($p = 0.05$), and weight loss (4 pounds) improved; there was less desire for gambling; but no difference was found in substance usage. One study compared MI/CBT versus CBT alone and found MI/CBT was more effective at improving adherence.

**Discussion and Implications:** Findings indicate a MI/CBT intervention is a means of improving adherence in challenging clinical problems that require behavior change, such as in cancer patients who are prescribed oral agent for treatment. A recent Cochrane review on medication adherence found an 11% improvement using MI and a 23% improvement with CBT. Thus, combining MI/CBT may yield higher adherence rates to oral agents in cancer patients and support adequate dosing for effective cancer treatment, which is a challenging clinical problem.

## C2-0056

### SYMPTOM SEVERITY, SYMPTOM ATTRIBUTION, AND PREFERENCE FOR ASSISTANCE WHILE TAKING CHEMOTHERAPY OR TARGETED AGENTS.

Sandra Spoelstra, PhD, RN, Michigan State University, College of Nursing, East Lansing, MI; Barbara Given, PhD, RN, FAAN, Michigan State University, College of Nursing, East Lansing, MI; Monica Schueller, BA, Michigan State University, College of Nursing, East Lansing, MI; Kimberly Ridenour, Undergraduate Nurse Scholar, Michigan State University, College of Nursing, East Lansing, MI; Melissa Hilton, RN, Michigan State University, College of Nursing, East Lansing, MI; Zhiying You, MD, PhD, Michigan State University, College of Nursing/C-Stat, East Lansing, MI; Charles Given, PhD, Michigan State University, Family Medicine, East Lansing, MI

**Underwriting or Funding Source:** Grant entitled "Determining severity, interference, and number of days of symptoms from side effects in cancer patients prescribed oral chemotherapy agents, how comorbid conditions may influence symptoms, and patient actions and preferences in regard to symptom management" from the Walther Cancer Foundation, Indianapolis, IN.

**Poster Category:** Clinical Innovation

**Topic Significance and Study Purpose/Background/Rationale:** When taking oral agents, patients need to manage symptoms so that they do not become so severe that it leads to decreased function and difficulty with activities of daily living,

and reducing or stopping the medication, rendering the cancer treatment ineffective. Over fifty oral anti-cancer agents are currently on the market, and within three years, 25% of treatment will be delivered in pill form, shifting treatment to the responsibility of patients. This study describes symptoms from oral agents, attribution of symptoms, and preference for assistance.

**Methods, Intervention and Analysis:** Thirty cancer patients taking oral agents from six cancer centers were interviewed via phone at baseline, weekly for three weeks, and at week eight. Information on cancer site, stage, treatment, symptom severity, comorbidities and medications, symptom attribution, and preference for obtaining help to manage cancer treatment related symptoms were obtained. Confidence intervals on preferences were conducted using exact method. Associations between preferences, attribution to cancer, treatment, comorbidities, and characteristics were explored; and generalized estimating equations examined associations between symptoms and other factors.

**Findings and Interpretation:** Mean age was 65; 50% each Female/Male; 83% Caucasian and 17% African American; and 77% had one or more comorbid condition. Nine different oral agents were taken; with 53% on Xeloda. 43% also had IV chemotherapy. Patients had a mean of 5.3 symptoms of 15 assessed, across the assessments. Fatigue (83.3-90.0% across assessments) was most common. Symptom attribution at baseline was 57% to cancer and treatment, 36% to comorbidities plus cancer and treatment, and 7% to only comorbidities; with minimal symptom change over time. Attribution including comorbidities was higher in older, female, African Americans. At baseline, 37% preferred phone calls for symptom management, 27% written material, 23% email, and 3% text messages. No preferences were found by age, gender, race, cancer type, or oral agent. Those with later stage cancer preferred written material (p=.03) and there was a marginal association (p=0.08) in preference for those with comorbidities for phone calls or email.

**Discussion and Implications:** Clinicians need to determine patient preferences, and provide symptom management strategies in the manner in which they will be utilized.

## C2-0078

## APPLIED PATIENT TRACER METHODOLOGY: A USEFUL STRATEGY TO EXPLORE RECRUITMENT CHALLENGES IN BIOBEHAVIORAL RESEARCH.

Darryl Somayaji, PhD, RN, Dana-Farber Cancer Center, Boston, MA; Manan Nayak, MA, Dana-Farber Cancer Institute, Boston, MA; Laura Hayman, PhD, RN, FAAN, University of Massachusetts–Boston, Boston, MA; Erica Sorrentino, MA, Dana-Farber Cancer Institute, Boston, MA; Erica Fox, MEd, RN, Dana-Farber Cancer Institute, Boston, MA; Amanda Green, MSN, RN, PHCNS-BC, University of Massachusetts–Boston, Boston, MA; Mary Cooley, PhD, RN, APRN-BC, FAAN, Dana-Farber Cancer Institute, Boston, MA

**Underwriting or Funding Source:** Lung Cancer Research Foundation

**Poster Category:** Clinical Innovation

**Topic Significance and Study Purpose/Background/Rationale:** Recruitment and timely accrual of participants into clinical trials can be challenging, especially in the context of behavioral research. Barriers may include eligibility criteria and lack of understanding of clinical practice and patient flow patterns within inpatient and ambulatory settings. Patient tracer methodology is an evaluation method in which select patient(s) and use of the individual's record serves as a roadmap to assess and evaluate the systems of care and services. The purpose of this evaluation was to apply the tracer methodology to explore screening and enrollment challenges encountered implementing a healthy lifestyle intervention study for patients receiving surgical treatment for lung cancer.

**Methods, Intervention and Analysis:** Several steps are required and were used in this application of tracer methodology: 1) determine recruitment goals and develop a standardized checklist to assess patient point of care (e.g. clinic visits, diagnostics) to evaluate study recruitment, 2) review the protocol to examine study timeline, accrual goals, eligibility criteria, available study resources, and organizational practice and procedures, 3) appraise study screening logs to evaluate accruals and study population, and 4) select identified study participants to apply tracer methodology using multiple resources (e.g. medical record, patient scheduling systems) to examine the potential study participant at each point of care from admission through discharge.

**Findings and Interpretation:** Over the first 6 months, using the current screening process, patients (n=223) were screened for eligibility; (n=38; 17%) were eligible; and (n=9; 23%) were enrolled. Recruitment goal is (n=36) within 9 months. Close evaluation and application of the tracer methodology allowed the study team to determine several missed opportunities regarding study enrollment. Narrow eligibility criteria (e.g. confirmed diagnosis prior to surgery) eliminated enrollment of newly diagnosed patients, and timing of patient screening (e.g. patient scheduling) created time constraints in the consent and enrollment process.

**Discussion and Implications:** Lessons learned suggest that identifying patients earlier and broadening eligibility criteria may help increase enrollment and allow more time for patients to consider the lifestyle intervention study prior to surgical intervention. The tracer methodology provides an opportunity for nurse scientists and study team to make timely protocol adjustments improving quality and study management that can ultimately impact study outcomes.

## C2-0175

## TRANSITION FROM RESEARCH TO PRACTICE: CREATION OF AN OUTPATIENT PALLIATIVE CARE PROGRAM.

Regan Demshar, MSN, NP-C, Seidman Cancer Center, University Hospitals Case Medical Center, Cleveland, OH; Wendy Rowehl Miano, DNP, MSN, RN, AOCN®, Seidman Cancer Center, University Hospitals Case Medical Center, Cleveland, OH; Elizabeth Weinstein, MD, MS, Seidman Cancer Center, University Hospitals Case Medical Center, Cleveland, OH

**Poster Category:** Clinical Innovation

**Topic Significance and Study Purpose/Background/Rationale:** Although palliative care throughout the treatment trajectory enhances patient quality of life, integration of it across multidisciplinary cancer teams with limited resources is challenging. From 1999 to 2011, an urban academic NCI Comprehensive Cancer Center supported palliative care through two grants: "Project Safe Conduct" (Robert Wood Johnson) and the "Cancer Support Team" (CST; National Institute of Health). Over this time period, a subset of patients with advanced cancer received care coordination, symptom management, education, advanced care planning, and spiritual support from a team of advanced practice nurses (APN), social workers, and a spiritual care coordinator. The researchers established physician engagement and defined roles, laying the foundation for the next phase. The purpose of this project was to expand outpatient palliative care services to all patients, transitioning the model of care from a discreet grant-funded team to a broad based team supported through hospital operation funding.

**Methods, Intervention and Analysis:** The CST partook in a retreat to define the model of care transition. In addition to

an APN, who was retained from the CST, a new palliative care physician and psychiatric clinical nurse specialist were hired. Other existing service such as social work, spiritual care, and dietary were merged into this new supportive oncology team. Key program development included a Symptom Management Supportive Care Clinic open five days a week and available to all patients. A brochure for patients and families was developed. The program was advertised to staff via flyers and presentations at meetings and tumor boards. A single pager was activated for easy access and scheduling.

**Findings and Interpretation:** Consistent with start-up experience of other small programs, the team evaluated 190 patients over 13 months. Many were seen on the day of referral for acute symptom concerns. Pain was the most common referral trigger (83%).

**Discussion and Implications:** Barriers to implementation of the clinic included: lack of clinic nurse support, scheduling challenges, clinic flow, and entry into new clinics. The availability of a full-time oncology/palliative care APN played a pivotal role in expansion of services, resolving operational issues, as well as advocating for patient symptom management, quality of life, and clarity in treatment goals.

## C2-0147

## THE SHARED MEDICAL VISIT FOR PATIENTS WITH A GYNECOLOGICAL MALIGNANCY UNDERGOING CHEMOTHERAPY: A PILOT STUDY.

Kayla Castaneda, RN, MSN, WHNP-BC, Texas Tech Health Science Center El Paso, Paul L. Foster School of Medicine, El Paso, TX; Loretta Hernandez, MPH, Texas Tech Health Science Center El Paso, Paul L. Foster School of Medicine, El Paso, TX; Zuber Mulla, PhD, CPH, FAAAAI, Texas Tech Health Science Center El Paso, Paul L. Foster School of Medicine, El Paso, TX; Harvey Greenberg, MD, Texas Tech Health Science Center El Paso, Paul L. Foster School of Medicine, El Paso, TX; J. Salvador Saldivar, MD, MPH, Texas Tech Health Science Center El Paso, Paul L. Foster School of Medicine, El Paso, TX

**Poster Category:** Clinical Innovation

**Topic Significance and Study Purpose/Background/Rationale:** The objective of this program was developed in response to The Institute of Medicine's *Crossing the Quality Chasm: A New Health System for the 21st Century* (2001) to provide patient-centered care that would result in improved patient satisfaction and decreased stress and anxiety through the use of a shared medical visit (SMV) for patients with a gynecologic malignancy undergoing chemotherapy in place of an individual visit (IV). Although the SMV has been studied in diabetes, chronic disease, and pregnancy, it has not been adequately evaluated in this population. The nurse practitioner (NP) led the project with medicine and other disciplines.

**Methods, Intervention and Analysis:** The study site was a university health sciences center located on the Texas-Mexico border. Patients with a gynecologic malignancy undergoing chemotherapy were recruited during an individual visit with a provider to participate in the SMV in place of an IV. Participants attended a group session with the NP every three weeks for chemotherapy follow up. These visits combined assessment, education, and social support in a SMV. The differences between the pre- and post-session scores were tested for statistical significance using the sign test, a non-parametric test. The median evaluation score was reported along with a distribution-free 95% confidence interval (CI).

**Findings and Interpretation:** Seventeen patients completed pre- and post-session questionnaires on perceived stress and patient satisfaction. Median pre- and post-session satisfaction scores (higher scores, max of 255, indicated more satisfaction) were 127 and 131, respectively, (p=0.63). Median pre- and post-session perceived stress scores (lower scores indicated less stress and could range from 0-40) were 20 and 21, respectively, (p=1.0). Sixteen patients completed the post-evaluation questionnaire (lower values, near or at 16, indicated that the patient felt the program was excellent) with a median score of 21 (95% CI: 16, 30). Overall, patients felt they benefited from the SMV verses IV.

**Discussion and Implications:** While the results of our interim analyses were not statistically significant, it appears that patient satisfaction with the SMV model may increase over time. Based on our preliminary results, we are initiating a prospective cohort protocol to compare the care models to further demonstrate the benefits of the SMV in this population.

## C2-0023

## FAITH, HOPE, AND DETERMINATION: A CARE PLAN FOR OVARIAN CANCER SURVIVORS.

Eileen Tuschl, MSN, ACNS, APRN, Aurora Cancer Care, Sussex, WI

**Poster Category:** Clinical Innovation

**Topic Significance and Study Purpose/Background/Rationale:** The purpose of the research study was to identify gaps in research related to concern of women with ovarian cancer transitioning from treatment completion to survivorship. Secondly, to identify ways the advance practice nurse can effectively address the outcomes in the clinical setting.

**Methods, Intervention and Analysis:** The research approach was qualitative descriptive methods. Subjects were recruited through a recruitment flyer that was sent to oncology nurse navigators and community outreach groups. Five ovarian cancer survivors, ranging in ages 28-74 participated. Two subjects participated via in person individual interviews and three participated via individual secure internet discussion. Content analysis was used to identify themes that described concerns of ovarian cancer survivors as they transitioned from treatment to survivorship. Investigator, data, and methodological triangulation allowed for insight into ovarian cancer survivors transition experiences.

**Findings and Interpretation:** The sample was made up of five Caucasian married women with an average age of 55.8 years, with a range of 28-74 years old. It is comparable to the national average age of 63 of women with ovarian cancer (National Cancer Institute, 2011). Their education ranged from high school to four-year degree and all had health insurance at the time of diagnosis. The results from the qualitative descriptive study were abstracted from the interviews and then conveyed through themes and subthemes. Themes were identified if a topic was mentioned by more than one subject. Four major themes were derived from the interviews. They included: (a) dealing with physical symptoms, (b) questioning spirituality, (c) coping with uncertainty, and (d) facing the unknown.

**Discussion and Implications:** All the identified themes can be addressed through follow-up care with an advanced practice nurse or an oncology nurse navigator via face-to-face visits or follow-up phone calls. A detailed ovarian cancer survivorship care plan needs to be supplied to the patient at the completion of treatment in order to provide guidance for appropriate follow-up care after treatment. Lastly, it would improve the gaps in communication between survivors and providers.

## C2-0221

## THE DEVELOPMENT AND IMPLEMENTATION OF AN INTERDISCIPLINARY EVIDENCE-BASED PROGRAM FOR DISTRESS ASSESSMENT AND MANAGEMENT IN THE ONCOLOGY PATIENT POPULATION.

Carol Blecher, RN, MS, AOCN®, APNC, CBPN-C, CBCN®, Trinitas Comprehensive Cancer Center, Elizabeth, NJ; Roxanne Ruiz-Adams, LSW,

Trinitas Comprehensive Cancer Center, Elizabeth, NJ; Timothy Clyne, RN, BA, Trinitas Regional Medical Center, Elizabeth, NJ; Caitlin Mulligan, LCSW, Trinitas Regional Medical Center, Elizabeth, NJ; Valerie Ramsberger, RN, MSN, ACHPN, Trinitas Regional Medical Center, Elizabeth, NJ

**Poster Category:** Collaborative Teamwork

The purpose of this project is to improve oncology patient satisfaction and quality of care through the assessment and management of distress. Distress is a detrimental symptom in patients with cancer. It can cause poor decision making, lack of adherence to treatment and unfavorable patient outcomes. The nursing, palliative care and social work teams will take the lead in managing distress in our cancer patient population. They will ensure that the professional team understands the importance of assessing for distress and the impact of this project on the quality of patient care delivered. We will institute the use of a distress assessment as an evidence-based practice initiative through the use of the NCCN guidelines for distress management and the NCCN distress thermometer, a validated tool, both in the inpatient and outpatient oncology areas. The intervention effectiveness will be evaluated through the re-assessment of the patient's distress using the distress thermometer. Patient satisfaction will be evaluated post intervention using select questions from our current patient satisfaction survey. NCCN guidelines indicate that educational programs should be developed to ensure that health care professionals have the knowledge and skills to assess and manage distress. Therefore, the first objective of this project is the education of staff regarding distress, the NCCN distress thermometer and the proper referral protocol. To support this goal, we designed a seminar to educate and motivate staff. NCCN also indicates that patients and families should be informed that management of distress is an integral part of total medical care and be provided with appropriate information about psychosocial services in the treatment center as well as in the community. In compliance with this NCCN standard, a team of staff nurses from both inpatient and outpatient areas will create educational material regarding distress for the patients, which will be translated into Spanish, French-Creole and Polish, in order to meet the needs of our patient population. In addition to the creation of education material, we have implemented a policy regarding distress that will focus on the assessment points (inpatient and outpatient), triggers for social worker, APN or palliative care team intervention based on psychosocial or physical problems, and the communication of information to promote continuity of care, between the inpatient and outpatient areas. In the outpatient area, the nurses will assess the oncology patients for distress, in accordance with NCCN guidelines, at the time of initial consultation, upon initiation of treatment, midway through the treatment and on completion of therapy. These patients will also receive a satisfaction survey at initiation and on completion of treatment. Information regarding distress and its management will be given to the oncology patients during their consult visit in the outpatient unit and upon admission to the oncology inpatient unit. The inpatient nurses will assess the patient for distress on admission and as distress is identified. The oncology patients admitted to the oncology inpatient unit will be given satisfaction surveys at the time of the initial distress assessment and upon discharge. All patients scoring a four or above on the distress thermometer will be referred for services based on the identified problem/concerns. The nurses will sign each form and identify any referrals initiated. Original forms will be filed in the permanent medical record under the psychosocial tab, by the health information management department in the outpatient area. All interventions will be documented by appropriate personnel in the patient medical record. Communication between the inpatient and outpatient multidisciplinary team will occur via email. The nurse manager will also communicate, via email, with the APN and outpatient social worker regarding patient needs that require continued intervention. Plans for the future include, but are not limited to, incorporating pastoral care and complementary therapy. Satisfaction will be evaluated using specific questions from our current catalyst patient satisfaction tool. The questions are specifically directed at information regarding physical comfort and coordination of care. These questions include, "How often did the staff do everything they could to help you with your pain or discomfort? Did you receive all of the services you thought you needed for your cancer treatment at this facility? How often was there good communication between the different staff members treating you? How often was your pain or discomfort well controlled?" With the planned intervention we expect to see improvement in satisfaction scores in the above areas. The distress and satisfaction survey scores will be entered into an Excel® spreadsheet. The data will be used to evaluate the impact of the intervention.

## C2-0228

## A COLLABORATIVE EFFORT TO IMPROVE ACCESS TO BREAST CARE IN AN URBAN ACADEMIC MEDICAL CENTER.

Eleanor Miller, RN, MSN, OCN®, CBCN®, Abramson Cancer Center, University of Pennsylvania, Philadelphia, PA; Jonathan Colon, BS, Abramson Cancer Center of University of Pennsylvania, Philadelphia, PA; Nancy O'Connor, MSN, CRNP, Abramson Cancer Center of University of Pennsylvania, Philadelphia, PA

**Poster Category:** Collaborative Teamwork

**Topic Significance and Study Purpose/Background/Rationale:** Access to care is a major area of focus in oncology care with increasing patient volumes and time constraints of providers' schedules. With a marked increase in volume of patients seeking care at the Rena Rowan Breast Center, it was important to update the scheduling guidelines and new-patient process in order to improve patient access to breast care. In a collaborative effort, the nurse navigator, nurse practitioners, physicians, and administration worked to update and improve the training and support for non-medical scheduling staff as well as the new-patient process for breast patients- both for breast cancer and benign breast problems. NICCQ standards have a target of time from breast cancer diagnosis to surgical appointment at <5 working days. English standards have looked at a maximum two week wait time to see a breast specialist, and EU standards are similar. Nursing can have a direct impact on these targets and expectations by being involved in triage and scheduling (as well as using the role of the advanced practice nurse). These process improvement goals will be to prioritize appointments for highly suspicious mammograms or newly-diagnosed with breast cancer to less than one week, to use the nurse practitioner clinics maximally and effectively, and to triage other diagnoses and patients per updated decision tree guidelines, thereby increasing access to care and increasing availability of providers. Many planning and brainstorming sessions were held among clinicians, administration and scheduling staff to discuss ways for improvement. Clinicians and administration updated the new patient process by developing a decision tree and manual with additional information regarding the new patient process. A new patient intake form was created with the assistance of IT for use as a tool by clinical and nonclinical staff in the electronic medical record. A series of in-services were held with scheduling and clinical staff for education and training of these updates. Education was also provided to the scheduling staff to refer patients with complex needs to the nurse navigator. It was important to look at measurable outcomes from the implementation of the updated new patient process. Clinical and administrative staff measured outcomes such as appointment lag time, scheduling with appropriate providers, and patient satisfaction. Access to surgery clinics

has improved for new breast patients since the process updates were implemented. Patients can be seen an average of 3.5 days sooner for both malignant and benign diagnoses. Access to the nurse practitioner clinic also improved by 9.4 days. Patients that are diagnosed within the health system can be seen within 3 days, and those that who are diagnosed outside the system, within 7 days. Patient satisfaction also improved for both ease of scheduling appointment and receiving desired appointment. The education that was provided to scheduling staff influenced these outcomes as patients are now increasingly scheduled with appropriate providers, thereby increasing overall access to timely and appropriate care. The nurse navigator receives consistent referrals for patients interested in clinical trials, prophylactic mastectomies, complicated or delayed scheduling where patients need additional assessment, intervention or other identified needs. This is important for access to care by connecting patients with the appropriate providers and resources from the initial point of entry. Data analysis is still being completed to determine specific appointment lag times for various diagnoses including breast cancer patients, as well as determining the lasting effects of implementing the updated scheduling guidelines. Efforts are also being made to improve access to medical oncology appointments and clinical trials. Ongoing communication among nursing, clinicians and scheduling staff ensures appropriate access to care for patients. Continued collaboration among staff and involving additional nursing staff will help to sustain the changes. Continued assessment and refinement of the new-patient process, as well as continued training for new and current staff, will be essential to maintain improved access to care. This model could easily be applied to other modalities (medical oncology) and have broad implications for enhanced access throughout the health system.

## C2-0226

## VACCINATIONS POST-HEMATOPOIETIC STEM CELL TRANSPLANTATION: A QUALITY IMPROVEMENT PROJECT.

Kathy Leonard, MA, ANP-BC, ACNP-BC, AOCNP®, New York University Clinical Cancer Center, New York, NY

**Poster Category:** Collaborative Teamwork

**Topic Significance and Study Purpose/Background/Rationale:** The purpose of this poster presentation is to evaluate the Bone Marrow and Stem Cell Transplant Program as a clinical microsystem, using the 5P's assessment tool (Purpose, Professionals, Patients, Processes and Patterns) in order to diagnose and develop a quality improvement initiative; specifically focusing on revaccination against preventable diseases in post bone marrow and stem cell transplant recipients. Hematopoietic stem cell transplantation (HSCT) is the process by which stem cells that are destroyed by high doses of chemotherapy and radiation are replaced by healthy stem cells that are harvested from bone marrow, peripheral blood or umbilical cord blood. The two major types of transplants are: autologous, in which patients receive their own stem cells and allogeneic in which the patient receives stem cells from that of another person who may or may not be related. Patients that undergo hematopoietic stem cell transplantation become severely immunocompromized post transplantation and are at risk of developing bacterial and viral infections. HSCT recipients lose protective immunity to vaccine preventable diseases and this becomes a significant cause of re-hospitalization, morbidity and mortality. Methods of Evaluation Data for this microsystem was collected using the Clinical Microsystem: Outpatient Specialty Care Practice Workbook, (Green book) as a reference. For one month professional staff and patient interviews were conducted. An audit of five charts from each of the four transplant physicians were evaluated, specially looking at immunization orders, patient education regarding immunization and documentation of immunizations. After careful evaluation of the chart audits it was revealed that the ordering of the vaccinations post-transplant was not standardized, documentation of vaccination was not standardized and patient teaching was not evident in the patient record. The analysis of problem identified the need for standardization of post bone marrow vaccinations. A team of 16 interdisciplinary members consisting of an Oncology Nurse Practitioner, one Oncology Clinical Nurse Specialist, two Bone Marrow Transplant Coordinators, four Bone Marrow Transplant physicians, one Infectious Disease physician, the Director of the Oncology Pharmacy, one Pharmacist, the Nursing Director of Oncology services, an Information Technology nurse, and one Bone Marrow Transplant nurse and one Bone Marrow Transplant Nurse Practitioner; was given the task to develop a standardization of vaccinations. The team met as a whole and in individual group meetings, which were held over a two month time frame. The objectives were to develop a standard of immunization protocol for post stems cell transplantation patients, to develop an electronic order set and to develop a documentation tool to be given to the patients for education.

**Findings and Interpretation:** This quality improvement project resulted in standardization in immunizations post stem cell transplantation, a documentation tool for staff and patients to be utilized for patient education and a documentation tool to be utilized in the electronic medical record.

**Discussion and Implications:** The literature clearly dictates the importance of re-immunization in the post hematopoietic stem cell transplantation recipients. The global aim is to eliminate preventable infections, decrease re-hospitalizations, decrease morbidity and mortality and ultimately avoid a public health crisis. Specifically a standardization of electronic orders and documentation of vaccinations is beneficial in the theme of quality improvement and safety in this patient population. The evaluation and outcomes of this project will be summarized one year after its implementation. Initial feedback has been favorable.

## C2-0239

## INPATIENT ONCOLOGY DISCHARGES: INTERDISCIPLINARY APPROACH TO IMPROVING QUALITY, COMMUNICATION, AND EFFICIENCY.

Kellyann Jeffries, ANP-BC, MSN, Massachusetts General Hospital, Boston, MA; Elizabeth Hodgman, MSN, FNP-BC, Massachusetts General Hospital, Boston, MA; Barbara A. Blakeney, MS, RN, FNAP, Massachusetts General Hospital, Boston, MA; Barbara Cashavelley, RN, MSN, AOCN®, BC-NE, Massachusetts General Hospital, Boston, MA; Mali C. Wold, MS, ANP-BC, Massachusetts General Hospital, Boston, MA; Margaret Driscoll, MSN, NP-C, Massachusetts General Hospital, Boston, MA; Martha Brezina, MSN, ANP-BC, Massachusetts General Hospital, Boston, MA

**Poster Category:** Collaborative Teamwork

**Topic Significance and Study Purpose/Background/Rationale:** Collaboration is essential to improving the quality of cancer care. The Massachusetts General Hospital (MGH) Cancer Center has a dedicated inpatient oncology 32-bed inpatient medical oncology unit that provides Relationship Based Care. Patients on this unit have a diagnosis of lymphoma, multiple myeloma, sarcoma, or a solid tumor cancer. Patients are cared for throughout the cancer trajectory from the time of diagnosis, treatment, and through end of life. Patients admitted to this oncology unit require complex oncology care. The complex medical care we provide addresses their disease treatments, symptom management, pain management, and support of emotions and spiritual issues. Integrative complimentary therapies, acupuncture, massage, and art and music therapies are available to patients on this unit. As an academic teaching hospital, patients are admitted to either

the house staff or an Oncology NP service. Both groups are lead by oncologists, and further managed by oncology staff nurses as well as other interdisciplinary specialists. Given the need for coordination of care among all of the inpatient providers; length of stay can sometimes be extended. A delay of inpatient discharges impacts available beds for patients in need of admission for treatment or symptom management. A group of interested clinicians formed to further explore possible inefficiencies in an attempt to provide a timely, comprehensive, and safe discharge. Interdisciplinary Team Member Constituents: Barbara Blakeney, RN, Jessica Berry, RN, Martha Brezina, NP, BettyAnn Burns, RN, Barbara Cashavelley, Margaret Driscoll, NP, Elizabeth Hodgman, NP, Kellyann Jeffries, NP, Kristen Patrick, RN, Mali Wold, NP. The inpatient oncology unit and team receive a monthly dashboard with pre noon discharges and length of stay metrics and targets. The data indicated that we were not meeting our unit target percentages of pre noon discharges, and length of stay. In response to this, an interdisciplinary team was formed to articulate our current discharge process, identify possible barriers, and suggest possible interventions for improvement As a group, our goal is to continue to explore the clinician's role in the discharge process to improve communication across the entire patient experience and increase efficiency and ultimately further improve the quality of care and quality of life for our cancer patients. As the team identified the many elements involved in the discharge process, we realized that our approach to improvement would also have to be multifactorial. Our answer to this started with weekly meetings with available members of the team, which has greatly helped with momentum of the initiative. To understand the existing process, the team met with stakeholders in the discharge process. This includes patients, Case Managers, Nurses, NPs, Outpatient and Inpatient Oncologists. To explore the patient's perspective, we conducted a five-question survey of patients around issues of discharge. Clinician stakeholders were asked to participate in a focus group meeting to further explore their perspective. We began to increase unit and team awareness of our initiative. The Nurses and Nurse Practitioners on both services began to analyze on a daily basis the reasons that discharges were delayed. Increased awareness and communication about discharge was further improved by expanding the dialogue at the early morning discharge focused "huddle," to help. By providing visuals called "Huddle Bubbles" that prompt the team to include criteria for discharge, unique medications, and the likely need for post hospitalization service, we were able to enhance the quality of our shared time in rounds. Other small tests of change have included changing the time of blood draws to allow for adequate time to provide transfusion and electrolyte repletion as needed. Our current pilot brings the discussion of discharge into the room by adding visuals (poster graphic) and increasing use of the patient communication board, with goal of activating and engaging patient in the discharge process. Our most recent data reflects a significant positive change in percent of pre noon discharges, with >10% increase in pre noon discharges (poster graphic). We are further exploring the discrepancies between the medical team and the nurse practitioner team. Thus far, staff have acknowledged an increase in dialogue and communication around discharge, and voiced their observation of a changing culture, with greater communication around discharge. The team plans to continue weekly meetings, continue data measurements, and re survey patients. Keeping open to the process, we remained committed to providing our patients with a sustainable process of high quality, efficient hospital discharges.

## C2-0230

## SCREENING AND ASSESSMENT OF ANOREXIA IN NEWLY DIAGNOSED LUNG CANCER PATIENTS.

Kristin Roper, RN, PhD(c), Dana-Farber Cancer Institute, Boston, MA; Pamela Calarese, NP, MS, CS, Dana-Farber Cancer Institute, Boston, MA; Nancy Hilton, RN, MS, Dana-Farber Cancer Institute, Boston, MA; Mary Lou Siefert, DNSc, RN, AOCN®, Dana-Farber Cancer Institute, Boston, MA; Donna Berry, PhD, RN, AOCN®, FAAN, Dana-Farber Cancer Institute, Boston, MA

**Poster Category:** Collaborative Teamwork

**Topic Significance and Study Purpose/Background/Rationale:** Anorexia is more common in patients with lung and upper GI tract cancer than any other cancers. At diagnosis, 60% of patients with lung cancer have already experienced a significant weight loss and are at risk for anorexia. Often, patients are not referred for nutrition consults preemptively, but only when problems occur later in treatment. Deleterious clinical outcomes associated with anorexia include increased morbidity, mortality, reduced quality of life and well being, and other complications often requiring hospital admission. Team member constituents Nurses at all levels of practice can develop partnerships with nutritionists to help facilitate screening assessment, patient teaching, and outcomes. Therefore, there is a need to implement evidence-based practice guidelines that include screening and assessment of all high risk patients and to intervene with dietary education and counseling to address anorexia. Analysis of problem based on current evidence or standards The importance of early intervention for those at risk for anorexia has been acknowledged by Oncology Nursing Society (ONS) Putting Evidence into Practice (PEP) guidelines indicating that dietary counseling is likely to be effective. However, dietary counseling alone is not adequate and must be incorporated into an interprofessional patient care plan which includes screening and assessment. The objective of this evidence-based practice project was to evaluate a process for screening, assessment and early intervention for the prevention of anorexia of newly diagnosed patients with lung cancer.

**Teamwork process or description:** In order to identify the benchmark for nutritional referrals, an audit was conducted over a 2 day period of 62 thoracic patients who completed the Anorexia/Cachexia Sub-scale (A/CS-12) assessment; self-reported scores are categorized as good (-3 to +12), moderate (-19 to -4) or (-36 to -20) poor. The Nutritional Classification of Malnutrition, a comprehensive assessment tool utilized by nutritionists at DFCI, distinguishes between good, moderate and severe malnutrition using a different classification system. To establish cut-off scores that would warrant a nutrition referral, equivalent scores were established. Good is equivalent to "did not classify", moderate is equivalent to "non-specific protein calorie malnutrition and mild protein malnutrition" and a poor is equivalent to "moderate protein malnutrition, Marasmus or Kwashiorkor" as described in the Nutritional Classification of Malnutrition. The mean score for all 62 patients was -2 (SD = 8.71) in the "good" range. However, 27% (n=17) of the 62 patients reported moderate to poor scores and only 13% (n=8) received nutrition referrals. Seventy-seven percent (n=48) of patients were in active treatment and nearly one-fourth reported weight loss (n=15) in the prior 3 months. The audit results prompted further investigation to determine a risk analysis of all new lung cancer patients facing chemotherapy treatment. The A/CS-12 was used for screening and all new patients were referred for nutrition consults over a 2 month period. The "Nutritional Classification of Malnutrition" was found to be significantly correlated (r=.555, n=26, p=.003) with A/CS-12 defined categories at the time of consult. Based on the correlation results, a pre-determined cut-off score falling in the moderate or poor range category (-4) on the A/CS-12 was established to initiate a nutrition referral. It is not necessary to refer all new lung cancer patients to the nutrition service based on the findings of this audit. Therefore, the next steps are to screen all newly diagnosed lung cancer patients with the A/CS-12 in a pilot study to determine the feasibility of screening at diagnosis and all newly diagnosed lung cancer patients will receive nutritional referrals

using a cut-off score of -4 to preemptively address anorexia. Screening with the A/CS-12 will be coordinated by the infusion nurse at the first chemotherapy appointment (baseline) and every two weeks until a referral is made based on cut-off scores or by patient request. Early screening and assessment of patients with lung cancer identifies those at risk for anorexia. It is essential to intervene early in the trajectory of anorexia to maintain quality of life and well being and to mitigate other anorexia associated complications.

## C2-0216

## THE REAL CHALLENGES HEAD/NECK PATIENTS FACE UNDERGOING CHEMORADIATION: NEW TEAM MEMBERS TO THE TABLE.

Marilyn Haas, PhD, ANP-Bc, Mission Hospital, Asheville, NC; Angela Duncan, RN, Mission Hospital SECU Cancer Center, Asheville, NC; Sandra Barkei, RN, BSN, HTCP, HN-BC, Mission Hospital Integrative Medicine, Asheville, NC; Jeffrey Whitridge, RD, CSO, LDN, Mission Hospital, Asheville, NC; Patricia Handlon, MA/CCC-SLP, CBIS, Mission Hospital, Asheville, NC; Dawn Neuhauser, MSN, RN, NEA-BC, OCN®, Mission Hospital SECU Cancer Center, Asheville, NC; Judy Hunt, RN, Mission Hospital, Asheville, NC

**Poster Category:** Collaborative Teamwork

**Topic Significance and Study Purpose/Background/Rationale:** Head and neck cancer patients require an enormous amount of team effort to help the patient and their family members get through chemoradiation. Radiation therapy nurses and nurse practitioner recognized that patients were lacking in emotional, spiritual, and mental well-being beside the devastating physical needs and wanted to incorporate more of a team approach to caring for patient/family members as a whole. The purpose of this committee was to form an intradisciplinary team that could meet the patient's emotional, spiritual, mental as well as the physical needs of a patient undergoing chemoradiation. Initially, spear heading an intradisciplinary team members composed of radiation nurses, dietician, speech and physical therapists, nurse practitioner, palliative care, and case manager from home health, our team now includes the aforementioned members and new to the team integrative holistic nurses, chemotherapy nurses, and a navigator. This team is meeting monthly to present new patients and everyone identifies needs and recommendations for treatments from their own level of expertise. Nursing began a spray and weigh program (modeled after Beth Israel's Hospital Program that assesses patient's needs daily, sprays the oral cavity with saline for cleansing and preventive problems), integrative holistic nurses now offers four supportive modalities (aromatherapy, healing touch, guided imagery, and hand/foot massage) while patients are actively having treatment, integrative oncology consults for herb and supplement recommendations for side effects of oncology treatments and also if interested in more complementary modalities inclusive of acupuncture for xerostomia, speech therapist conducts pre-evaluations of swallowing abilities, physical therapist offers counterstrain, massage, and exercises to overcome pain issues, nurse practitioner developed initial standing orders for consults (i.e. dental, PEG placement, team consults, tests), navigator to help with finances and resources, dietician schedules frequent meetings to ensure weight gain/stabilization for healing, and integrative music and pet therapy involved on treatment days. Communication between radiation and medical oncology nurses is occurring more frequently. Accomplishments from this committee includes: approved standing orders for any head/neck patient to initiate consults from all areas, holistic nurses conducted nursing research on four modalities (research purpose was to investigate the effects on parasympathetic nervous system and the correlation of their self-reported evaluation of anxiety, nausea, and pain which the pilot study revealed statistical significance with 3 of the 4 modalities), ongoing development of outcome monitors in the medical records regarding pain relief, hospitalization, weight, etc. Nurses have incorporate several PEP interventions, i.e. radiodermatitis, fatigue, sleep wake disturbance. Palliative care team involvement with supporting patients/family members emotionally and making plans for the future. Plans for the committee is to involve wound and ostomy nurses involved since the cancer center has outpatient experts available and physician involvement from ENT, surgeons, as well as medical and radiation oncologists. Chaplaincy is by referral only, but would like to address spiritual needs in a more formal manner. PET therapy survey will be initiated this fall to get patient feedback. Ultimately, if everyone comes to the discussion table at the week head/neck patients are diagnosed, we hope this will be a better experience for the patient.

## C2-0237

## MEASURING AMBULATORY ONCOLOGY NURSES' KNOWLEDGE, PERCEPTION AND ATTITUDES IN CARING FOR OLDER CANCER PATIENTS: A COLLABORATION WITH NICHE (NURSES IMPROVING CARE FOR HEALTHSYSTEM ELDERS).

Mary Elizabeth Davis, RN, MSN, AOCNS®, MSKCC, New York, NY; Elizabeth Capezuti, PhD, RN, FAAN, NYU College of Nursing, NICHE, New York, NY; Heidi Yulico, MSN,RN, GNP-BC, MSKCC, New York, NY; Lorraine K. McEvoy, DNP, MSN, RN, OCN®, MSKCC, New York, NY; Joseph Shuluk, BA, NYU, NY, NY; Julianna Petra Brouwer, MPH, NYU, New York, NY

**Poster Category:** Collaborative Teamwork

**Topic Significance and Study Purpose/Background/Rationale:** Currently, adults over the age of 65 comprise about 13% of the population in the United States; this number is expected to increase to almost 20% by 2030. Approximately 60% of all cancers occur in adults over the age of 65. In older adults, cancer treatment is made more complex by diminished functional status, co-morbid conditions, altered physical, physiological and psychosocial capacity. With the increase in the aging population, oncology nurses need to be knowledgeable of the unique challenges in caring for the older adult with cancer. While significant work has been accomplished related to older adults in inpatient settings, there are no instruments available to measure oncology nurse attitudes, perceptions, and knowledge specific to care of older adults in ambulatory settings. This information would influence interventions to promote high quality care to older oncology patients. Team member constituents: Ambulatory nurse researchers and clinicians at a NCI designated comprehensive cancer center partnered with the research team of the national nursing program NICHE. Analysis of problem based on current evidence or standards: Considerable published psychometric testing of the NICHE-GIAP (Geriatric Institutional Assessment Profile) survey support the subscales of this tool to measure the geriatric care environment and the knowledge and attitudes of nurses working in the in-patient, medical surgical setting. These tools, however, are not applicable to the ambulatory oncology environment where older adults receive the majority of the care related to their cancer. Our goals are to: (1) Develop a measure of the geriatric care environment (GCE) and the Geriatric Knowledge/Care Perceptions scale for ambulatory oncology (AO) nurses; and (2) Perform validity and reliability testing of the GCE-AO and the AO-Geriatric Knowledge/Care Perceptions. Our objectives are to: (1) Develop tool with input from oncology and geriatric experts, nurse leaders and staff nurses; (2) Seek expert, nurse leader and staff nurse consensus of items for relevance; and (3) Conduct psychometric testing in nationally representative sample. Teamwork process or description: A geriatric oncology

steering group at the cancer center reviewed items of the current NICHE-GIAP survey and deleted items not applicable to ambulatory and/or oncology setting, changing wording of items to reflect ambulatory oncology practice, and developed new items. Focus groups were formed with nurse leaders, and nurses with varying levels of expertise from across the ambulatory settings. By directly obtaining the input of the target population for the survey at the item-development stage, we were able to get the key concepts and identify content areas that could be incorporated to revise or create new items. The participant's description of their experiences also directed the phrasing of items. The revised tool based on this input was sent to all focus group participants and experts in the field (clinicians, leaders and researchers) to confirm applicability to the ambulatory oncology setting. Several themes emerged from the focus groups: lack of integration between aging issues and cancer; inadequate communication with primary care providers and patient of expectations of oncology services to provide primary care; older adults require intensive surveillance of symptoms to avoid toxicities and reduce decline; older adults do not consistently call regarding side effects of treatments; the treatment plan and side effects of those with dementia are particularly difficult to manage; and family members are not aware of the time-intensive process of supporting their older family member during treatment. In addition to framing item development, these themes also identify key issues to address in interventions specific for older oncology patients and their families. Following the next revision of the instrument based on the expert and focus group participant review, we will conduct psychometric testing of the instrument with nationally representative panel of nurses including all the cancer center's ambulatory nurses, nurses at all NICHE hospitals with ambulatory cancer centers (n = 120 centers) and non-NICHE major cancer centers that agree to participate.

## C2-0223

## A MULTI-DISCIPLINARY COLLABORATION TO PROMOTE ADHERENCE IN CANCER PATIENTS TAKING ORAL AGENT MEDICATIONS.

Sandra Spoelstra, PhD, RN, Michigan State University College of Nursing, East Lansing, MI; Seija Olivier, BSN, RN, Allegiance Hematology Oncology, Jackson, MI; Candise Love, MSN, ACNP-BC, OCN®, Huron Medical Center, Flint, MI

**Poster Category:** Collaborative Teamwork

**Topic Significance and Study Purpose/Background/Rationale:** Over 50 oral agents in pill form are currently on the market, with projections that in three years, 25% of cancer treatment will be delivered in pill form with patients assuming responsibility for self-management at home. For oral agents to achieve a therapeutically effective level for cancer treatment, patients must strictly adhere to the regimen. Adherence to oral cancer agents is often less than 80%, which may be inadequate for treating the cancer. Many barriers exist to promoting medication adherence for cancer patients in fast-paced office settings. This include time demands, focusing on physical care, not assessing adherence, not knowing what to do about lack of adherence, or not understanding the home environment. To date, standardization of care for this form of treatment has been lacking; and to complicate it even further, sporadic follow-up is occurring. Further, there is poor agreement on how to measure adherence other than patient self-report. There is also minimal to no payment for patient education or phone monitoring for patients receiving treatment in pill form. Prior studies indicate adherence rates in cancer patients treated in pill form is less than 80%; and over 10% of those newly prescribed this form of treatment do not refill their first prescription. Thus, adherence is a significant clinical problem. This team targets a challenging clinical problem among patients with a life-threatening disease, assisting them in adhering to and completing their cancer treatment, impacting symptoms, quality of life, and longevity. Team Members: Michigan Society of Hematology and Oncology called together a group of high performing research scientists (Dr. Spoelstra), advanced practice nurses (Candise Love, MSN, RN), practice managers (Seija Olivier, BSN, RN), as well as oncology pharmacists, and pharmaceutical company representatives. Process: First, the group reviewed the State of the Science on oral agents to include: factors influencing adherence and successful interventions. Consensus has been reached on a concept map of the steps in the patient care process, tracking each step in the process to promote adherence to an oral agent. This starts with the decision to move to oral agent treatment, an evaluation of readiness for oral agent treatment (i.e., can they swallow and afford the pills), review of need for assistance with coverage, all culminating with the documentation of the prescription in the EMR. A pharmacist review of the full medication list would occur for polypharmacy, to prevent and drug-to-drug interactions. An oral agent training course would occur encompassing both adherence and symptoms management for the oral agent. This course would include both self-study modules and training face-to-face with an advanced practice registered nurse (APRN) and be documented in the EMR within a week of the script being written. Once the patient obtains the oral agent, the start date would be documented in the EMR. The patient would begin the oral agent, and ongoing weekly to monthly follow-up on the phone would occur by the APRN, assessing adherence and symptom severity as well as prescription refills. Office visits would be planned based on the type of treatment regimen and individualized to patient needs. The group intends to use the Information, Motivation, and Behavior Skills Model (IMB), used in HIV ART treatment, to guide its work. IMB asserts even a well informed or highly motivated individual will have difficulty achieving and sustaining optimal adherence if they lack objective skills required to acquire or self-administer medications or feels incapable of performing such behaviors.

**Objectives:** Future work includes: 1) development of patient and/or caregiver self-training manual in electronic format; 2) development of an electronic training manual for oncologists and advanced practice nurses; 3) agreement on a medication adherence and symptom management toolkit; 4) standardization of APRN scripts for face-to-face and phone interactions to include readiness for oral agent use; 5) development of a patient self-assessment of adherence and symptom; and 6) testing the effectiveness of this approach at assisting patients to manage their adherence and symptoms. 100% adherence to oral agents and use of symptom management strategies so that symptoms do not become so severe that patients reduce or stop their oral agent. Formative and evaluative monitoring of the plan to develop a standard of practice for those administered cancer treatment in pill form will be ongoing over the next year at each phase of the development of this project.

## C2-0225

## NAVIGATION TO IMPROVE BREAST CANCER TREATMENT OUTCOMES IN LOW INCOME WOMEN: A MULTIDISCIPLINARY COLLABORATION.

Susan Appling, PhD, CRNP, Johns Hopkins University School of Nursing, Baltimore, MD; Susan Scarvalone, MSW, Mercy Medical Center, Baltimore, MD; Ryan MacDonald, PhD, Mercy Medical Center, Baltimore, MD; Shannon Manocheh, BS, Mercy Medical Center, Baltimore, MD; Arti Varanasi, PhD, Mercy Medical Center, Baltimore, MD; Kathy J. Helzlsouer, MD, MHS, Mercy Medical Center, Baltimore, MD

**Poster Category:** Collaborative Teamwork

**Topic Significance and Study Purpose/Background/Rationale:** Poor and minority women have high death rates from breast cancer. Low adherence to treatment guidelines contributes to this poor outcome. Additionally, fragmented care, limited psychosocial support, poor symptom management, and inefficiencies of the health system continue to plague women with breast cancer,

especially those with low-income and those living in rural areas. A randomized controlled trial was implemented to assess the impact of a virtual patient navigation intervention using a multidisciplinary provider team and patient access to vetted reliable internet sites, videos, and documents via a web-based knowledge and communication portal to support treatment adherence and physical and psychosocial well-being during active breast cancer treatment and to improve selected clinical outcomes of care. The impact of the intervention on these outcomes will be assessed following trial completion. Team members include a nurse practitioner, social worker, clinical nurse and physician, all with expertise in breast cancer treatment and the supportive care and services needed to optimize patient outcomes. A biostatistician and technology expert assist in data analysis and maintenance of the web-based portal. Analysis of problem based on current evidence or standards Past research has demonstrated that breast cancer patients who are able to maintain treatment adherence by avoiding treatment delays, missed appointments and failure to take medication have improved survival. However, multiple barriers to treatment adherence exist for low income women without health insurance and/or those in rural areas. Low-income women, in addition to the challenge of the diagnosis of breast cancer, face added burdens from poverty, fragmented social networks, and, for rural women, limited geographic accessibility to resources. This study is aimed at addressing these key treatment issues for the vulnerable populations of low income, uninsured and/or rural newly diagnosed breast cancer patients. Objectives include: Determine the efficacy of virtual patient navigation using a multidisciplinary team approach that is provided through a web-based knowledge and communication portal to improve adherence to adjuvant breast cancer treatment. Efficacy is determined by measuring and comparing the medication possession ratios for oral hormonal treatment and the relative dose intensity delivered for chemotherapy and radiation therapy between women randomized to the intervention (web-based education portal plus access to navigator) and the control arm (web-based education portal only). Determine efficacy of the intervention by measuring and comparing treatment-associated fatigue and overall symptom and quality of life scores between women in the treatment and control arms. Team members meet weekly to discuss patient progress, identify and problem solve challenges to treatment adherence and the overall physical and psycho-social well-being of patients. Although each team member has a consistent patient cohort with whom they regularly communicate, each team member also has specific areas of expertise and thus, can provide consultation and guidance for other members and their patients. Additionally, over time as patient needs change, the primary navigator may change to more closely match patient needs with provider expertise. Outcomes The recruitment goal is 100 women (50 treatment, 50 control). Currently, 72 women have been enrolled; the majority are African-American (59%); the mean age is 50. Nearly half (49%) of subjects have some college education, 27% work full-time and 28% live in rural areas across the state. Treatment outcomes will be assessed post trial completion; however, interim data regarding usability of the web-based portal and associated resources have been assessed and reveal that use of the portal is strong but higher among those in the treatment arm. Additionally, qualitative data including comments from women in both arms reveal that they find both the navigational support and information within the web-based portal helpful. For example, a woman in the treatment arm noted "I think the portal is great and the staff I have met or spoken to are great with questions and concerns!"

## C2-0151

## PATTERNS OF CARE FOR ADVANCED PANCREATIC CANCER.

Jessica Engel, DNP, RN, AOCNP®, Marshfield Clinic, Stevens Point, WI; Adedayo A. Onitilo, MD, MSCR, Marshfield Clinic, Weston, WY; Darlene Plank, MSN, Marshfield Clinic, Marshfield, WI; Rosemary Jadack, PhD, RN, University of Wisconsin–Eau Claire, Eau Claire, WI

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** Advanced pancreatic cancer has a poor prognosis. Faced with limited time, many hope for longevity while maintaining as good a quality of life as possible. A multitude of considerations are beneficial for the patient, caregivers and medical providers to address related to coping, decision making, cancer treatment, symptom management and end of life care. Often these topics are not fully addressed, potentially leading to a less than ideal experience for the patient. To evaluate care patterns and address completeness of care at the Marshfield Clinic for patients with stage IV pancreatic cancer.

**Methods, Intervention and Analysis:** Data from 59 patients diagnosed with stage IV pancreatic cancer from 2010 - 2012 was manually abstracted from the electronic medical record. Variables collected included patient and cancer characteristics, cancer treatment, significant symptoms, number and reason for hospitalization, and whether or not prognosis, treatment options, palliative or hospice care, other supportive care referrals were offered or occurred.

**Findings and Interpretation:** Median age at diagnosis was 68.8 years. Presenting symptoms included: pain (39, 66.1%), weight loss (32, 54.2%), decreased appetite (14, 23.7%), jaundice (10, 16.9%) and nausea (9, 15.3%). Forty-seven patients (79.7%) had chemotherapy, median duration 62 days (2-322). Referrals were made to hospice (24, 40.7%) and palliative care (12, 20.3%), and much less frequently to social services, pain service, dietician, or psychiatry. Median time from last chemotherapy to death was 31 days (2-322) and from hospice consult to death 16 days (0-322). Eighteen patients (30.5%) had blood clots. Thirty-nine (23.7%) were hospitalized at least once. Median survival from diagnosis to death was 4.5 months.

**Discussion and Implications:** Understanding the met and unmet needs of patients with advanced pancreatic cancer is likely to lead to improved quality of care and quality of life. Further research is needed in the area of palliation and care navigation specifically for advanced pancreatic cancer.

## C2-0132

## MANAGEMENT OF SELECTED TOXICITIES ASSOCIATED WITH THE USE OF IMMUNE CHECKPOINT MODULATORS.

Matthew Burke, APRN-BC, Smilow Cancer Hospital at Yale New Haven, New Haven, CT; Brianna Hoffner, MS, RN, ANP-BC, AOCNP®, The Angeles Clinic and Research Institute, Los Angeles, CA; Krista Rubin, MS, RN, FNP- BC, Massachusetts General Hospital Cancer Center, Boston, MA

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** Recent published data has highlighted the effective use of immune modulating therapy in the treatment of several human cancers including melanoma, renal cell carcinoma, and non-small cell lung cancer. Enhancing tumor immunity can lead to a powerful and durable anti-tumor effect, but it can also result in serious immune-related adverse events (IRAEs). Current studies, which combine multiple immuno-modulators, have reported grade 3 or higher IRAEs in almost half of the patients. With one of these agents already FDA approved, management of IRAEs presents an increasingly common challenge to the Oncology Nurse. Different from the side effect management of cytotoxic therapy, toxicity from the new class of immune checkpoint modulators requires oncology nurses to possess a detailed understanding of the unique mechanism of action and ensuing immune mediated effects on vital organ systems. Using a case-based

approach, we will address four major areas of toxicity as highlighted by data from several on-going phase 1-2 clinical trials.

**Methods, Intervention and Analysis:** Drawing upon data from two on-going clinical trials, selected adverse effects of immune checkpoint modulators have been identified as more likely to occur in the oncology patient. First the mechanism of action of these agents and supporting immunology will be reviewed. Second we will present data extracted from recently published reports concerning the frequency and severity of adverse effects. Finally, using a case-based approach, management algorithms will be applied to several cases of patients who developed serious adverse effects.

**Findings and Interpretation:** In most instances, even severe cases of IRAEs can be safely managed. As the use and popularity of these agents expands and becomes more commonplace in modern oncology, the Oncology Nurse needs evidence-based guidelines and training in the management of these complex patients.

**Discussion and Implications:** The immune system is a powerful tool and enhancing tumor immunity is quickly becoming a way to achieve complete and durable responses to cancer. This new approach to anti-cancer therapy requires thoughtful management. Clinical trials have identified the organ systems most frequently affected by IRAEs. Treatment algorithms have been applied consistently. This experience forms the basis for the development of evidence-based guidelines that are critical for the Oncology Nurse to safely and effectively manage patients receiving this form of therapy.

## C2-0153

## WHAT ABOUT SLEEP IN CHILDREN WITH CANCER?

Ameera Fayad, RN, The State University of New York at Buffalo, Buffalo, NY; Laurie Connors, DNP, RN, The State University of New York at Buffalo, Buffalo, NY; Suzanne Dickerson, DNS, RN, The State University of New York at Buffalo, Buffalo, NY

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** Sleep disturbances are a prevalent problem in children with cancer that can have serious consequences on their physical and mental health. However, the scientific evidence is still emerging on this problem. Therefore, evaluating the current literature on sleep is essential to fully understand the scope of the problem and to guide future interventions. The purpose of this review is to evaluate the literature regarding sleep in children with cancer and its relation to the children's wellbeing. In addition the review will identify the factors that contribute to poor sleep and the interventions used to improve sleep quality in this population.

**Methods, Intervention and Analysis:** Systematic review of the literature using the PRISMA approach. A systematic literature search was conducted on the following database: Medline, CINAHL, PsychInfo, and Embase, from 1975 till 2013 among peer reviewed journals using the following keywords combined with or/and: child, pediatric, cancer, neoplasm, sleep, sleep disorders, insomnia, symptom cluster, quality of life. The studies were included if they were published in English, had a sample of children aged 18 years or younger diagnosed with any type of cancer, and studied sleep and quality of life. Studies that were reviews, published in other languages were excluded. Data on the sample, treatment, sleep and quality of life variables were collected from each study.

**Findings and Interpretation:** Sleep disturbances were associated with different aspects of quality of life. Both treatment and disease related factors contributed to poor sleep in children with cancer during the treatment period and during survivorship years. The literature shows that sleep disturbances do not occur in isolation from other symptoms in this population. Interventions to improve sleep are scarce in children with cancer; however, physical activity interventions to improve fatigue show promising effect on sleep.

**Discussion and Implications:** The majority of the current literature on sleep in children with cancer used cross-sectional design; therefore, future studies with longitudinal design are needed to provide thorough information on sleep. Further interventions that target sleep disturbances are required for this population to improve their wellbeing.

## C2-0091

## PREDICTORS OF HYPERGLYCEMIA IN HOSPITALIZED PATIENTS WITH LEUKEMIA.

Sue Storey, RN, AOCNS®, St. Vincent Hospital, Indianapolis, IN; Diane Von Ah, PhD, RN, Indiana University School of Nursing, Indianapolis, IN

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** The goal of this study is to gain understanding of the predictors of hyperglycemia in hospitalized leukemia patients. Hyperglycemia (defined as blood glucose >126 mg/dL) is a common and significant healthcare problem among hospitalized patients. In cancer patients, hyperglycemia has been shown to decrease immune response and increase resistance and response to chemotherapy, and toxicity from chemotherapy. Known predictors of hyperglycemia in other hospitalized patient populations include: age, diagnosis of diabetes, and body mass index (BMI). However, to date, few studies have examined predictors of hyperglycemia in hospitalized cancer patient population including leukemia patients. Understanding predictors of hyperglycemia will facilitate early identification of high risk leukemia patients and facilitate early intervention to those most in need.

**Methods, Intervention and Analysis:** The Malglycemia Orbit Model guided this study. A retrospective cohort design was used. Forty two consecutive medical charts of leukemia patients admitted to 750-bed hospital were analyzed. Information regarding age, body mass index (BMI), documented diagnosis of diabetes and reason for hospital admission (treatment or symptom management) were extracted from the medical record. A BMI of > 25 was considered overweight. A fasting blood glucose > 126mg/dL was considered hyperglycemia. Logistic regression was used to analyze the data.

**Findings and Interpretation:** The sample included mostly patients with acute myeloid leukemia (55%). Study subjects were Caucasian, male (74%), average age 58 (SD=12.2), non-diabetic (69%), with 67% having a BMI greater than 25 (average 28). Findings from this study identified overweight patients admitted for symptom management (versus treatment) had a 2-fold greater risk of hyperglycemia. Although age and diagnosis of diabetes have been associated with hyperglycemia in other studies, they were not shown to increase risk of hyperglycemia among this sample.

**Discussion and Implications:** Knowledge of key predictors of hyperglycemia will assist oncology nurses in early identification of high risk patients. And will facilitate preemptive strategies for management of blood glucose during hospitalization.

## C2-0135

## IS SLEEP A PIVOTAL FACTOR ASSOCIATED WITH QUALITY OF LIFE IN PATIENTS WITH CANCER?

Suzanne Dickerson, DNS, RN, University at Buffalo, Buffalo, NY; Laurie Connors, DNP, University at Buffalo, Buffalo, NY; Ameera Fayad, MS, RN, University at Buffalo, Buffalo, NY; Dean Grace, PhD, RN, University at Buffalo, Buffalo, NY

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** While it is known that there is a high prevalence of sleep-wake

disturbances in patients with cancer, at diagnosis, during treatment, and in survivorship; researchers are just beginning to evaluate the impact of potential interventions to promote good sleep outcomes. The purpose is to review the literature on sleep and quality of life in patients with cancer to describe the factors associated with poor sleep, the influence of poor sleep on quality of life outcomes, and the evidence to support future interventions.

**Methods, Intervention and Analysis:** Systematic review of the literature using the PRISMA approach. Four data bases (CINAHL, MEDLINE, PsyINFO and EMBASE) were searched using terms cancer or neoplasm, sleep or sleep disorders or insomnia, and quality of life; for all years, English language, peer reviewed articles on research studies. Studies were included if they considered sleep and quality of life and were omitted if reviews or theses. Data were collected, date, cancer type, type of study (descriptive, RCT), treatments, and timeframe, patient demographics, measurement variables, and results.

**Findings and Interpretation:** The incidence of sleep disturbance varies among cancer diagnoses and is often presented within symptom clusters that include, fatigue, pain, depression, anxiety, insomnia, sleep wake disturbances. Measurement of sleep related variables have improved over time to include objective measures; however, subjective instruments co-mingle cancer related fatigue and other psychological factors that challenge determining effects of interventions tested.

**Discussion and Implications:** A variety of interventions include pain management, pharmacologic and non-pharmacologic interventions including exercise, cognitive behavioral interventions and circadian rhythm promotion (light and melatonin). While some interventions are promising, the level of evidence does not support currently recommending the interventions in practice.

## C2-0165

## A PILOT STUDY EVALUATING THE FEASIBILITY OF A HOME-BASED ACTIVITY PROGRAM TO REDUCE CANCER-RELATED FATIGUE.

Jean Boucher, PhD, RN, ANP, Dana-Farber Cancer Institute, Boston, MA; Kathleen McDermott, BS, RN, Dana-Farber Cancer Institute, Boston, MA; Richard Boyajian, MS, NP, Dana-Farber Cancer Institute, Boston, MA; Michele Walsh, DNP, Dana-Farber Cancer Institute, Boston, MA; Meghan Underhill, PhD, RN, Dana-Farber Cancer Institute, Boston, MA; Kristin Roper, MS, RN, Dana-Farber Cancer Institute, Boston, MA; Donna Berry, PhD, RN, FAAN, Dana-Farber Cancer Institute, Boston, MA

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** Cancer related fatigue (CRF) is the most common symptom experienced by adult ambulatory oncology patients during and after treatment. A significant prevalence of CRF is seen in Hodgkin's (HD) lymphoma post autologous bone marrow transplant (BMT) patients including associations with pulmonary dysfunction, psychological sequelae, and quality of life. Assessment and management of CRF is a top priority for oncology nurses. Current evidence has demonstrated that applying exercise as a low impact activity intervention is effective to ameliorate CRF and is seen as a national priority for incorporation as standard practice. The objective of this evidence-based practice project was to evaluate the feasibility of a home-based, low impact activity program aimed at improving CRF in ambulatory cancer patients.

**Methods, Intervention and Analysis:** Eligible participants were English-speaking adults at least 27-30 days post-autologous BMT. In this single arm, feasibility design, structured nurse-led education and monitoring of participant-reported activity occurred over four months. Participants wore a pedometer and recorded daily activity and fatigue levels using the Electronic Self Report Assessment-Cancer (ESRA-C) program. Descriptive analysis of measures included PROMIS and 0-10 fatigue scores, type of activity and duration, and steps taken, throughout the study period. We evaluated study enrollment and completion rates, number of diary entries, and nurse contacts.

**Findings and Interpretation:** The study enrollment included 17 consented participants, 7 of whom remained active for the study duration. Participants were retained in the study for a mean of 11 weeks with 168 total diary entries. Mean number of diary entries per week for active participants was 6.07 (SD 1.4), with a mean of 2.67 (SD 2.4) missing entries. Mean scores for fatigue averaged 2.6 (SD 1.9), mean duration of activity was 32 minutes, and pedometer steps mean was 2,993. A majority (93%) of active participants reported activity at 3 -7 days a week. Mean number of nurse contacts for active participants was 3.42 (SD 2.6).

**Discussion and Implications:** A home-based, low impact activity program aimed at improving CRF in ambulatory cancer patients was most feasible for approximately 3 months post discharge from clinic. Implications include patient activity, fatigue scores, and participant considerations for future pilot study with other cancer populations in ambulatory care settings.

## C2-0174

## DOWN WITH THE NEUTROPNIC DIET.

Melissa Foster, MS, RN, WHNP-BC, OCN®, VCU Health System, Massey Cancer Center, Richmond, VA

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** VCU Health System followed a "neutropenic diet" for patients with absolute neutrophil counts less than 1,000 cells/mm$^3$. The neutropenic diet restricted all fresh fruits and vegetables from the patients' diets. Patients' nutritional statuses were often poor despite nutritional consults and many were placed on total parenteral nutrition. Nursing staff and administration asked, "Is the neutropenic diet effective in reducing infection rates in the neutropenic oncology population?"

**Methods, Intervention and Analysis:** Using the Johns Hopkins Model for evidence based practice, Cinhal, MedLine, and the Cochrane Library were searched for "neutropenic diet, low bacterial diet" with limits set to 2005 and newer. Fifteen pertinent articles were found. All articles revealed a lack of empiric evidence to support the use of diet restrictions for neutropenic oncology patients.

**Findings and Interpretation:** VCUHS has since eliminated the neutropenic diet and has initiated a "food safe handling" diet based on recommendations from the Centers for Disease Control and Prevention with the "Fight Back" program. Patients' diets while in patients are restricted against lettuce because the institution does not re-wash the pre-washed bagged lettuce. Additionally, cold cuts are restricted because the recommendation is that deli meats be warmed. Nursing worked directly with the dietary department and information technology to have the diet order removed and the new recommendations added to the computer system. The resident and attending physicians were oriented to the changes in recommendations. Nursing staff throughout the oncology department were educated through inservices where the results of the literature search were reviewed. Additionally, this poster was at the Week of the Nurse presentations for hospital-wide education for diet changes. Brochures have been designed for patient education, providing examples of good food hygiene, foods to enjoy, and food to avoid.

**Discussion and Implications:** With the change in diet restrictions, it is hoped that patients will have improved nutritional status, less need for total parenteral nutrition, and improved quality of life. Future qualitative studies can be performed

regarding patient perception of those goals listed above. Quanitative studies can be performed looking at rates of infection prior to the diet change and those afterwards.

## C2-0173

## GRANISETRON TRANSDERMAL SYSTEM (GTS): AN OPTION TO HELP PREVENT CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING IN ELDERLY PATIENTS.

Deborah Braccia, PhD, MPA, RN, ProStrakan, Bridgewater, NJ; Danna Vest, MSN, APRN, BC, AOCN®, Smilow Cancer Hospital at Yale New Haven, New Haven, CT; Christine Brown, RN, BSN, MA, ProStrakan, Houston, TX

**Underwriting or Funding Source:** ProStrakan

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** Oncology nurses are often faced with older patients who may experience forgetfulness and the burden of polypharmacy, thus making adherence to an additional daily, oral antiemetic regimen difficult. One solution to these challenges is the granisetron transdermal system (GTS), a patch that delivers continuous, controlled delivery of granisetron for up to 7 days. A previously reported phase 3 clinical study compared the efficacy and safety of GTS with oral granisetron for preventing chemotherapy-induced nausea and vomiting (CINV) in patients receiving moderately emetogenic and highly emetogenic multi-day chemotherapy (NCT00273468). The objectives of this retrospective analysis were to examine the efficacy and safety of GTS for CINV in various age groups, including elderly patients >65 years of age.

**Methods, Intervention and Analysis:** This was a phase 3, double-blind, placebo-controlled, non-inferiority study. Patients were randomized to oral (2 mg/day, 3-5 days) or GTS (one patch, 7 days), before receiving multi-day chemotherapy. The primary endpoint was complete control of CINV (CC; defined as no vomiting and/or retching, no more than mild nausea, and no rescue medication) from chemotherapy initiation until 24 hours after the start of the last day's chemotherapy.

**Findings and Interpretation:** A total of 582 patients were included in the preliminary sub-analysis; 136 patients <65 years of age, 253 patients 50-64 years of age, and 193 patients <50 years of age. CC was similar between GTS and oral treatment groups for all age groups, and was maintained irrespective of increasing age. GTS was well tolerated in all age groups, including elderly patients.

**Discussion and Implications:** Based on a preliminary sub-analysis of a phase 3 study, the GTS was found to be safe and effective in various age groups, including elderly patients <65 years of age. The GTS may provide an option for patients challenged with pill burden and forgetfulness. It is important for oncology nurses to be aware of this option, and how to properly administer.

## C2-0171

## SELECTIVE ESTROGEN RECEPTOR MODULATOR (SERM) METABOLITES AND THEIR ACTIVITIES IN BREAST CANCER THERAPY: IMPLICATIONS FOR PRACTICE.

Deborah Braccia, PhD, MPA, RN, ProStrakan, Bridgewater, NJ; Marcelle Kaplan, RN, MS, AOCN®, CBCN®, Adelphi University College of Nursing and Public Health, Merrick, NY; Carolyn Lavender, MSN, AOCNP®, ARNP, ProStrakan, St. Pete Beach, FL

**Underwriting or Funding Source:** ProStrakan

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** Endocrine therapy, including the use of selective estrogen receptor modulators (SERMS), forms the backbone of hormone receptor positive breast cancer. Although tamoxifen and toremifene, both SERMs, have similar efficacy and safety profiles, a key difference is that they are metabolized by different hepatic enzymes. This difference may impact treatment decisions.

**Methods, Intervention and Analysis:** A literature review was conducted to assess the data on SERM metabolism and potential implications for practice. This presentation will review the data available on the metabolism of tamoxifen and toremifene, along with the information on inhibitors and inducers of the metabolic enzyme systems that may respectively alter the plasma concentration of each drug.

**Findings and Interpretation:** Tamoxifen and toremifene differ in structure by only one chlorine atom and are metabolized through similar cytochrome P-450 (CYP) conversions. Differences between the two SERMs become evident in the activity profiles of their respective metabolites. Toremifene is believed to be active in its parent form, and is mainly metabolized in the liver by CYP3A4 enzymes. In contrast, tamoxifen requires metabolism by CYP2D6 enzymes in order to be converted to its active metabolites. There are data suggesting that potent CYP2D6 inhibitors, such as certain selective serotonin reuptake inhibitors (SSRIs), affect metabolism of tamoxifen, but not toremifene. There is also data to suggest that concentrations of tamoxifen and its active metabolites are altered in patients with varying CYP2D6 genotypes. Because toremifene is not affected, the clinical benefit to patients with estrogen receptor-positive breast cancer taking toremifene would not be subject to genetic variations in CYP2D6 status or by CYP2D6 inhibiting medications. Debate is ongoing regarding the clinical sequelae of these CYP2D6 alterations and outcomes in patients taking tamoxifen.

**Discussion and Implications:** Nurses need to be aware of potential drug-drug interactions and potential genetic polymorphisms affecting the efficacy of tamoxifen and toremifene. Strong inducers and inhibitors of CYP3A4 should be avoided with toremifene. However, given that toremifene activity is independent of the ongoing CYP2D6 controversy, it represents a well-studied, reliable SERM option for treating women with estrogen-positive breast cancer when CYP2D6 may be an issue due to concerns with genetic status or CYP2D6 inhibitors.

## C2-0100

## EBP FELLOWS2: A MODEL FOR SHARING SCIENCE IN THE ONCOLOGY SETTING AND BEYOND.

Laura Herbener, BSN, RN, OCN®, Lehigh Valley Health Network, Allentown, PA; Elena Brinker, RN, Lehigh Valley Health Network, Allentown, PA; Vanessa Chisholm, BSN, RN, Lehigh Valley Health Network, Allentown, PA; Tiffany Lopez, BSN, RN, CMSRN, Lehigh Valley Health Network, Allentown, PA

**Poster Category:** Evidence-Based Practice

**Topic Significance and Study Purpose/Background/Rationale:** Although the importance of evidence-based practice (EBP) is acknowledged and purportedly ascribed to, recent studies have shown only a small percentage of health care providers are incorporating research into practice. This presentation describes a pragmatic model—the EBP FellowS2 (Sharing Science) program—to facilitate integration of evidence into practice. The program has been implemented in a 988 bed Magnet hospital, which includes a designated National Cancer Institute Community Cancer Centers Program.

**Methods, Intervention and Analysis:** The EBP FellowS2 program is a 12-week structured offering of didactic and project development, with an additional 8 to 12-week mentored process to project completion. Participants are selected based on a proposed question with potential to improve patient care through translation of evidence into practice. FellowS2 include dyads of a masters prepared unit educator and direct care nurse, who collaboratively design and implement an EBP project. The program is facilitated by a

doctorally (PhD) prepared nurse serving as coach to the dyad project teams. FellowS2 participate in didactic offerings, workshops and coaching sessions that take them from question formulation through an evidence review and project development, implementation, evaluation, and dissemination. For purposes of this presentation, the process is illustrated by an EBP project undertaken by a team from two of the organization's Hematology/Oncology Medical-Surgical units. This team is seeking to establish an evidence-based, standard protocol for fever management in the hospitalized adult. Interventions include: 1) defining patient comfort and identifying appropriate assessment strategies to determine when intervention is necessary; and, 2) designing and utilizing a decision tree to guide fever management.

**Findings and Interpretation:** A pre- and post- intervention survey is in process to assess knowledge and use of fever management protocols. Goals, in addition to the standard protocol, are nurse and patient satisfaction with fever management.

**Discussion and Implications:** Oncology nurses must design and implement practical strategies to translate evidence into practice. The EBP FellowS2 program is a model that can be replicated in oncology care delivery settings. More specifically, the EBP study to develop an evidence-based standard for fever management serves as an example of how to use evidence to positively impact oncology practice.

## C2-0114

## MAXIMIZING THE EXPERTISE OF THE ADVANCED PRACTICE REGISTERED NURSE IN CANCER CARE: LEADING A SURVIVORSHIP CLINIC.

Jennifer Smith, MSN, CNP, Louis B. Stokes Cleveland Veteran's Administration Medical Center, Cleveland, OH; Polly Mazanec, PhD, ACNP, AOCN®, FPCN, Case Western Reserve University, Cleveland, OH; Sonya Curry, MSN, CNS, Louis B. Stokes Cleveland VAMC, Cleveland, OH; Melanie Lynch, MD, Louis B. Stokes Cleveland VAMC, Cleveland, OH; Lisa Arfons, MD, Louis B. Stokes Cleveland VAMC, Cleveland, OH

**Underwriting or Funding Source:** Department of Veteran's Administration Specialty Care Office and the Office of Academic Affiliations

**Poster Category:** Leadership Initiatives

**Topic Significance and Study Purpose/Background/Rationale:** Nearly 14 million Americans are estimated to be cancer survivors and the number is expected to increase as patients are living longer. The 2005 Institute of Medicine (IOM) report, *From Cancer Patient to Cancer Survivor: Lost in Transition*, demonstrated the need for specialized survivorship care. If advanced practice nursing is able to practice to the fullest extent of its capabilities, then oncology APRNs are well positioned to take the leadership role in meeting the demand for survivorship care.

**Methods, Intervention and Analysis:** An Advanced Practice Registered Nurse (APRN)- led Survivorship Clinic has been developed at a large Midwestern Veteran's Administration Medical Center in an interdisciplinary cancer center of excellence. Patients with breast, sarcoma, melanoma and lymphomas are seen by the Survivorship NP at diagnosis and are followed jointly with the medical and surgical oncologists during treatment. At the end of active treatment, patient visits are alternated between oncology physicians and the survivorship NP for five years. The focus of NP survivorship interventions transition from treatment related symptom management to prevention, detection and management of late effects, surveillance for recurrence or development of other malignancies, and health promotion and wellness. A templated note provides the essential components of survivorship care at each visit. The Survivorship NP practices under a Shared Care Model of Survivorship, keeping the primary care provider electronically involved in patient care across the disease trajectory.

**Findings and Interpretation:** One hundred twenty seven patients have been cared for during the first 18 months in the Survivorship Clinic. Data on patient satisfaction survey scores will be compared to surveys from a general oncology/surgical clinic. Qualitative data from primary care providers expresses their appreciation of the coordination of care and the Shared Care Model of Survivorship.

**Discussion and Implications:** This initiative demonstrates the ability to develop an APRN-led Survivorship Clinic within an interdisciplinary cancer care team. The initiative adheres to guidelines for quality cancer care and supports the recommendation of the IOM's *Future of Nursing: Leading Change, Advancing Health*. Future longitudinal research regarding the impact of the Survivorship NP Clinic on health promotion outcomes as well as cancer care outcomes is needed.

## C2-0112

## ESTABLISHING WIN-WIN NP/PHD COLLABORATION FOR RESEARCH RECRUITMENT.

Marie Flannery, RN, PhD, AOCN®, University of Rochester School of Nursing and Wilmot Cancer Center, Rochester, NY; Julie Kozlowski, RN, MS, FNP-BC, Wilmot Cancer Center University of Rochester Medical Center, Rochester, NY

**Poster Category:** Leadership Initiatives

**Topic Significance and Study Purpose/Background/Rationale:** Establishing a collaborative relationship between a nurse scientist and a nurse practitioner can enhance every aspect of the research process and ultimately result in improved patient care. One framework for examining collaboration is the 3 C's of communication, cooperation, and coordination. "Win-Win" is a scenario in which both sides benefit from listening to each other in order to produce more successful outcomes.

**Methods, Intervention and Analysis:** Using narrative technique we will present a single case exemplar with practical tips and strategies to establish and maintain a collaborative relationship. The research project was recruitment for a pilot study RCT testing an intervention to enhance pain and symptom assessment for individuals receiving treatment for advanced lung cancer. A shared goal of improving symptom assessment with stronger evidence base was mutually shared. The study proposal was shared prior to submission for input and approval. Early involvement was essential to establish trust and mutual respect. When subject recruitment was initiated multiple modes of communication were established, including face to face and email updates. The team NP quickly took the lead in identifying potential subjects. Recruiting in an ambulatory practice requires cooperation and coordination. A variety of situations arose that resulted in the NP determining that that it was not the best visit to ask the potential subject if they were willing to speak with the researcher. In response we created a "for the future" list of potential subjects to be approached at their next visit.

**Findings and Interpretation:** Recruitment has occurred at 30 different clinic sessions with 1-6 potential subject per session identified. When asked by NP if they are willing to talk with the researcher 67% were willing. Enrollment rate after talking with the researcher is 75%. Enrollment has ranged from zero to 3 individuals per day. Exceeding projections at 7 months there is 60% enrollment for a planned 2 year study.

**Discussion and Implications:** The practical details of establishing NP/nurse scientist collaboration is an example for other oncology nurse collaborative teams. This collaboration has enhanced subject enrollment to exceed projected targets and has been professionally beneficial to both involved creating a win win scenario.

## C2-0109

## PREDICTORS OF INVOLVEMENT IN RESEARCH ACTIVITIES AT A COMPREHENSIVE CANCER CENTER.

Pamela

Ginex, EdD, RN, OCN®, Memorial Sloan-Kettering Cancer Center, New York, NY

**Poster Category:** Leadership Initiatives

**Topic Significance and Study Purpose/Background/Rationale:** Nurses across the United States are being charged to support, conduct and apply research findings to clinical and administrative practice. The 2001 ANA Code of Ethics states that "nurses can participate in the advancement of the profession through the development, evaluation, dissemination and application of knowledge in practice." Translating these charges to the clinical setting can be a challenge. This study investigated the attitudes and beliefs of nurses at a large, urban comprehensive cancer center regarding nursing research and the environment that supports it, in preparation for a re-design of the research program.

**Methods, Intervention and Analysis:** The setting was an urban, 400 bed specialty hospital (a comprehensive cancer center with a long history of medical research). The "Survey of Nurses' Research Attitudes and Activities" was utilized. The survey includes three parts: attitudes towards nursing research, research environment scale, and research involvement survey. The survey was sent electronically to all nurses employed at the institution (N= approximately 2100). All nurses were eligible to participate and data collection occurred over a 3 week period in 2013. The survey was anonymous. Descriptive statistics and qualitative analysis were utilized to describe the data.

**Findings and Interpretation:** 375 nurses completed the survey. 93% of respondents were female and 50% were between age 30 and 49. 89% held a Bachelors or Masters degree. The nurses valued research with 96% responding that research findings should guide practice and 99% responding that engaging in research contributes to their professional growth. Support for this interest was lacking with 64% of nurses responding that qualified mentors were not available and 78% responding that time is not provided during the workday for research projects. Open-ended responses further supported these findings.

**Discussion and Implications:** Clinical nurses are interested in research and see its benefit for their professional growth as well as their nursing practice. Supporting this interest has remained challenging and is where nurse researchers and educators should expand their role in bridging the gap. Oncology nursing has a strong history in research and can take a leading role in translating this experience to direct care nurses.

## C2-0081

## INPATIENT ONCOLOGY NURSE PRACTITIONERS: A SNAPSHOT OF CURRENT PRACTICE.

Aaron Begue, MS, RN, FNP, The James Cancer Hospital, Columbus, OH; Margaret Rosenzweig, PhD, FNP-BC, AOCNP®, University of Pittsburgh School of Nursing, Pittsburgh, PA; Tamika Turner, NP, Indiana University Health System, Indianapolis, IN

**Poster Category:** Leadership Initiatives

**Topic Significance and Study Purpose/Background/Rationale:** Oncology Nurse Practitioners (ONP) are critical to the delivery of US cancer care. Increasingly ONPs are responsible for inpatient care, often managing the inpatient oncology services. In order to establish benchmarks for safety and quality for nurse practitioners within this setting it is important to begin with a snapshot of current inpatient ONP practice. This project, conducted through the ONP Special Interest Group, sought to provide baseline data regarding the demographics, workload and responsibilities of this unique role.

**Methods, Intervention and Analysis:** An electronic survey was developed by members of the Nurse practitioner Special Interest Group and distributed to the SIG members.

**Findings and Interpretation:** A total of 1965 questionnaires were distributed to all NP SIG members. There were 112 respondents for a 5.7% response rate. The majority (n=25) of the respondents were between 50-54 years of age. Eighty six percent (n=96) were masters prepared and 8 % (n=9) were doctorally prepared. The mean years of nursing experience was 20.4 years, with 6.7 years NP experience and 6 years of oncology NP experience. Half (50%, n=56) of the respondents identified the practice setting as "academic", 25 %( n=28) as "community" and 25% (n=28) as private practice or "other." Salaries were reflective of national nurse practitioner salaries. Sixty percent (n=68) of the ONPs made $90,000 or more annually including the 40% (n=45) of the respondents who made over $100,000 annually. Practice issues were also explored. Forty one percent (n= 46) of the respondents rounded on 5-9 patients daily, with 12.5% (n=14) rounding on greater than 20 patients/day. ONPs largely (88%, n=98) could not personally "cap" admissions but 49% (n=55) of the respondents felt they could provide safe and quality care responsible for 5-9 patients. The activities performed most frequently during a typical week were estimated to be: rounding with physicians (32Xmonth), patient and family teaching (31X/month), discharge planning (20X/month), medical management other than oncology (19x/month) and coordination of care (18x/month). Procedures were not a large part of daily responsibilities.

**Discussion and Implications:** Although broad in scope these results begin to paint a picture of ONP daily life. Future studies should result in a better understanding of ONP demographics, practice issues and most importantly patient outcomes.

## C2-0170

## TECHNIQUES FOR SUCCESSFUL IM INJECTIONS OF OCTREOTIDE LAR IN PATIENTS WITH NEUROENDOCRINE TUMORS.

April Boyd, RN, The University of Texas MD Anderson Cancer Center, Houston, TX; Deltra Muoki, clinical nurse, The University of Texas MD Anderson Cancer Center, Houston, TX

**Underwriting or Funding Source:** Novartis Pharmaceuticals

**Poster Category:** Nursing Education

**Topic Significance and Study Purpose/Background/Rationale:** The somatostatin analog octreotide long-acting release (LAR) is the mainstay of therapy for symptoms associated with carcinoid syndrome (including diarrhea and flushing) in patients with neuroendocrine tumors (NET) and is the only treatment approved by the FDA for this syndrome. Octreotide LAR is administered by monthly gluteal intramuscular (IM) injection. However, many IM injections are actually delivered subcutaneously with unknown effects on pharmacokinetics and efficacy.

**Methods, Intervention and Analysis:** We will describe a number of practical methods employed by the nursing staff at our institution to increase rates of successful gluteal injection of octreotide LAR.

**Findings and Interpretation:** Careful identification of the correct injection site is the primary reason for a successful injection. Locating bony landmarks before injection, specifically, the posterior-superior iliac spine (PSIS) and the greater trochanter (GT), should be done first. The diagonal line that connects these landmarks divides the buttock into 2 sections. Octreotide LAR is injected within 2 cm above this diagonal line. Further, the ideal injection site is 10-12 cm from the patient's midline and is approximately 4-6 cm inferior to the level of the PSIS and 7-9 cm above the level of the GT. Special care should be taken with female patients and patients with a high body mass index, as these factors are associated with a lower rate of successful injection. Application of pressure to the injection site with the nurse's free hand can aid in placing a successful IM injection. Regular in-service training and return demonstrations of injection technique are pivotal. The rate of successful gluteal IM

injections appears to increase as nurses administer more injections and get comfortable with the process. It is important to note that we have recently shown that improvements in rates of successful injection may correlate with improvements in symptom control.

**Discussion and Implications:** We have identified several practical techniques for nurses within our institution that improve the rates of successful IM injection of octreotide LAR. This appears to have direct beneficial effects on symptom control in patients with NET and may have implications for other conditions in which the primary treatment is administered by the IM route.

## C2-0087

## PREPARING NURSES FOR END OF LIFE CARE—OUTCOMES OF AN ONLINE DEATH AND DYING COURSE.

Victoria Loerzel, PhD, RN, OCN®, University of Central Florida, Orlando, FL; Norma Conner, PhD, RN, University of Central Florida, Orlando, FL

**Poster Category:** Nursing Education

**Topic Significance and Study Purpose/Background/Rationale:** Most nurses eventually care for people at End of Life (EOL). However, many nursing students report feelings of anxiety, stress, powerless and/or inadequacy when caring for patients and families at EOL. Although research has shown the benefit of incorporating EOL into undergraduate education, few nursing programs offer a separate EOL course. The purpose of this study was to describe nursing students' reflections on taking an elective online course on Death and Dying.

**Methods, Intervention and Analysis:** Thirty six undergraduate nursing students (non-licensed and licensed RNs) taking an online elective on Death and Dying participated. The course included the opportunity for student reflection and content covering common topics related to EOL care. Data were derived from the final course assignment, a semi-structured paper of student reflections on the course, descriptions of their fears of caring for clients at EOL, important content learned, intent to use content in future practice and remaining discomforts. Data were analyzed using directed content analysis process based on the content of the course.

**Findings and Interpretation:** Participants shared common initial fears. After the course, positive outcomes included: identification of cultural differences, communication strategies, symptom management techniques, and nurses role at end of life. However, lingering discomforts remained for three quarters of the participants. Student-identified benefits from the course included the ability to reflect upon their experiences in a non-judgmental setting.

**Discussion and Implications:** Knowledge, resources and skills gained in an online death and dying course provide a foundation for competent EOL nursing practice, a requirement in the care of patients at EOL. However, doubts and fears remained for some students. A foundational course in death and dying provides a forum for exploration of student beliefs, values, and fears about end of life away from the presence of dying patients and their families. These findings indicate that education in death and dying should be ongoing in order to reinforce content and increase comfort. Comfort may be a process that involves, time, practice and repeated opportunities for reflection or debriefing. Further course development and research should focus on continued education in death and dying.

## C2-0060

## ESTABLISHING STANDARDIZED INFORMATION AND SUPPORT PRACTICES ABOUT SEXUAL HEALTH FOR PATIENTS UNDERGOING CHEMOTHERAPY.

Patricia Kormanik, RN, MSN, AOCNP®, Moores UCSD Cancer Center, La Jolla, CA; Fiona Nasseraddin, RN, MSN, OCN®, Moores UCSD Cancer Center, La Jolla, CA

**Poster Category:** Quality Improvement

**Topic Significance and Study Purpose/Background/Rationale:** Despite established evidence-based guidelines for patient safety in the home following chemotherapy treatment, patients at the Moores UCSD Cancer Center have received inconsistent or incomplete information related to sexual health and activity. This is due in part to a variety of health care professionals providing information and patients seeking information from internet-based resources and from conversations they have with family and friends.

**Methods, Intervention and Analysis:** To address the problem of disseminating inconsistent or incomplete sexual health and activity information to patients and caregivers, providers at the Moores UCSD Cancer Center were surveyed to establish 1) who is managing the flow of sexual health information, 2) who provides the information, 3) sources of information, 4) comfort level of providers to provide information, 5) strategies to provide information (i.e. PLSST (Permission-limited Information-Specific Suggestion- Intensive Therapy) model), and 6) methods to verify that patients and caregivers understand and are compliant. Advanced nursing providers developed a survey to address the above questions. Providers (clinic nurses, infusion center nurses, mid level practitioners, oncologists and pharmacists) responded--via Survey Monkey survey-- from four of the Moores UCSD Cancer Center ambulatory clinic locations

**Findings and Interpretation:** Survey results (n = 20) showed inconsistent and incorrect dissemination of sexual health and activity information to patients and caregivers as well as a wide variety of provider strategies to ensure patient and caregiver understanding and compliance with the information.

**Discussion and Implications:** Survey outcomes prompted the Cancer Center to develop a smart set tool to be used in the patient's Electronic Medical Record (EMR), addressing post-chemotherapy treatment teaching. This tool can be entered into the clinic note and the patient's clinic visit summary. A periodic chart audit (6 charts/6 months) will measure the tool's effectiveness. Staff compliance with tool use will be addressed as part of an annual quality improvement process review. All clinical cancer practices are challenged with providing accurate, consistent and complete sexual health and activity information to patients and caregivers, as well as proving compliance with the information provided. This Moores UCSD Cancer Center teaching tool can serve as a template for clinical cancer care best practices.

## C2-0138

## BOARDING PASS: PROCESS IMPROVEMENT FOR AN INFUSION TREATMENT AREA.

Margaret Hawn, BSN, RN, OCN®, Stanford Cancer Center, Stanford, CA; Janice Kolsovsky, BSN, RN, OCN®, Stanford Cancer Center, Palo Alto, CA; Angela Primeau, MSN, RN, CNS-BC, OCN®, Stanford Cancer Center, Palo Alto, CA

**Poster Category:** Quality Improvement

**Topic Significance and Study Purpose/Background/Rationale:** Stanford Cancer Center is a National Cancer Institute designated cancer center. Its Infusion Treatment Area treats approximately 1500 patient per month. Since inception, the ITA has seen a correlation between increasing patient census and decreasing patient satisfaction directed at increased wait times. Our assessment revealed wait time increased due to multiple factors that could be resolved before a patient is roomed for treatment such as pending insurance approval, incomplete or unsigned orders, medication changes, and lab result delays.

An ITA RN would spend up to 1 hour gathering information to correct these deficiencies which left the patients as well as the nurses feeling very frustrated.

**Methods, Intervention and Analysis:** In hopes to improve this issue, the ITA initiated a "boarding pass" project in December 2012 that addressed all unresolved patient issues before a patient was roomed for treatment. The boarding pass checklist is comprised of checking insurance authorization; evaluating lab results; reviewing orders for completeness to ensure correct date, time, and signature. If there is a wait time of 15 minutes or more, the boarding pass RN would communicate any cause of delay and methods in place to correct it.

**Findings and Interpretation:** Data was collected to show what factors influence patient wait times and how much time is spent to resolve the issue. Over the 3 month period, sixty-nine hours were spent on average each month to correct these deficits while patients had to wait. 24% of all patient issues arose from our GI Oncology Department and 19% in Breast Oncology. The issue responsible for the majority (56%) of patient increased wait times was un-signed chemotherapy orders by the attending physician; while 22% had the incorrect dates for treatment on the order set.

**Discussion and Implications:** Patients, administration, as well as physician clinics have shown support for this pilot project. Patients report increased efficiency when roomed, improved communication regarding rationale of wait, and increased satisfaction when knowing active follow-up is being completed. Clinics have initiated additional performance improvement projects around ensuring complete orders prior to sending patients to ITA for treatment. Administration has approved a full time RN position to maintain this project. This project has potential to expand to all out-patient infusion centers as a means of decreasing patient wait times and increasing patient satisfaction.

## C2-0061

## IV HYDRATION IN RADIATION ONCOLOGY FOR PATIENTS RECEIVING CHEMORADIATION.

Lorraine Drapek, FNP-BC, Massachusetts General Hospital, Boston, MA; Carol Doherty, RN, BSN, Massachusetts General Hospital, Boston, MA; Lindsay Fitton, RN, BSN, Massachusetts General Hospital, Boston, MA; Elene Viscosi, NP, Massachusetts General Hospital, Boston, MA; Catherine Mannix, RN, MSN, Massachusetts General Hospital, Boston, MA

**Poster Category:** Quality Improvement

**Topic Significance and Study Purpose/Background/Rationale:** Patients with upper GI cancers who receive concurrent chemotherapy and radiation present unique management challenges for oncology nurses. This patient population often experiences significant nausea creating poor nutritional status, dysphagia and dehydration. Radiation esophagitis occurs in up to 74% of patients receiving chemotherapy/radiation for distal esophageal cancers and cancer of the esohageal junction. In 2011, the Department of Radiation Oncology opened a two chair unit for IV hydration. The purpose of this unit was to support patients receiving chemotherapy/radiation through the treatment process by preventing inpatient hospitalization, and treatment breaks secondary to toxicities involving dehydration. We are conducting a retrospective review of the impact of outpatient IV hydration on preventing hospitalization and treatment breaks. This process involved a collaborative relationship between nurse practitioners and nurses in the radiation oncology department. Patients at risk for developing severe symptoms of toxicities were identified by nursing. They were closely followed by nurses and NPs who performed patient evaluations, ordered necessary laboratory testing, and ordered IV hydration.

**Methods, Intervention and Analysis:** This is a clinical innovation and quality improvement review through a retrospective analysis of data involving identification of patients with toxicities, preventing of treatment breaks, and decrease incidence of hospitalization for 2011 and 2012,in comparison with 2009 and 2010.

**Findings and Interpretation:** We are in the process of completing the retrospective analysis. Preliminary findings show: 1. Patient satisfaction from a proactive approach to manage toxicities-per patient reports to nursing. 2. Decrease in emergency room visits, hospital admissions 3. Decrease in treatment breaks secondary to toxicities.

**Discussion and Implications:** We believe that the ability to manage significant upper GI toxicities in the radiation department will assist in more collaborative management of patients between radiation oncology and medical oncology. This information could pave the way for future collaborative studies/evaluation/management of toxicities between radiation oncology and medical oncology nurses.

## C2-0097

## ADHERENCE TO ANTIEMETIC GUIDELINES IN PATIENTS WITH MALIGNANT GLIOMA: TRANSLATING EVIDENCE INTO PRACTICE.

Mary Lou Affronti, DNP, RN, ANP, MHSc, Duke University Medical Center, Durham, NC; Susan Schneider, PhD, RN, Duke University Medical Center, Durham, NC; James Herndon, II, PhD, Duke University Medical Center, Durham, NC; Susan Schlundt, BSN, RN, Duke University Medical Center, Durham, NC; Henry Friedman, MD, Duke University Medical Center, Durham, NC

**Poster Category:** Quality Improvement

**Topic Significance and Study Purpose/Background/Rationale:** Poorly controlled chemotherapy-induced nausea and vomiting (CINV) reduce cancer treatment efficacy and significantly impair cancer patients' quality of life (QOL). A Doctor of Nursing Practice quality improvement project was implemented to improve provider adherence to evidence-based antiemetic guidelines for malignant glioma patients treated with moderately-emetic chemotherapy (MEC). Review of Duke University Preston Robert Tisch Brain Tumor Center's usual practice demonstrates a high incidence (45%) of CINV, despite premedication with short-acting 5-$HT_3$-serotonin receptor antagonists (5-$HT_3$-RA). Three meta-analyses establish National Comprehensive Cancer Network's evidence-based guidelines recommending the combination of long-acting 5-$HT_3$-RA (palonosetron) and dexamethasone for the prevention of acute and delayed CINV with MEC. Review of computerized order-sets generated for patients with glioma receiving MEC revealed that antiemetic guidelines were followed only 58% of the time possibly explaining our high CINV incidence. Thus, a combination intervention with an audit-feedback strategy that translates evidence into practice was developed to improve the adherence of guideline antiemetic ordering.

**Methods, Intervention and Analysis:** A one-sample, quasi-experimental design evaluated a combination intervention that included a provider education session, implementation of risk assessment tool with computerized standardized antiemetic guideline order-sets, and a monthly audit-feedback strategy. Post-implementation adherence to evidence-based antiemetic order-sets and patient outcomes was measured and compared to baseline and historical data. Primary outcome was the guideline order-set adherence rate. Secondary outcomes included nausea/vomiting rates and QOL. Outcomes were measured via the valid and reliable instruments: Osoba CINV survey, Functional Assessment of Cancer Therapy-Brain, and Functional Assessment of Chronic Illness Therapy-Fatigue.

**Findings and Interpretation:** Adherence to ordering MEC antiemetics according to guidelines increased significantly, from 58% to a sustained 90% (95% CI: 80,96; P<.05), with associated improvement in nausea/vomiting. In acute and delayed phases, 75% and 84% of patients, respectively, did not experience CINV. There was no significant change in QOL. A combination intervention and audit-feedback strategy to translate evidence into an oncology practice improved and sustained adherence to antiemetic guidelines.

**Discussion and Implications:** Adherence corresponded with effective nausea/vomiting control and preserved QOL in patients with malignant gliomas. Future projects utilizing this combination intervention and audit feedback strategy will be adopted by additional oncology collaborative teams within the Duke Cancer Institute to translate evidence based guidelines into practice.

## C2-0148

## SYMPTOM MANAGEMENT IN OVARIAN CANCER: A REVIEW OF THE THEORY OF SYMPTOM SELF-MANAGEMENT.

Lorie Davis, RN, MSN, OCN®, Indiana University, Indianapolis, IN; Julie Otte, PhD, RN, OCN®, Indiana University, Indianapolis, IN; Janet Carpenter, PhD, RN, FAAN, Indiana University, Indianapolis, IN

**Poster Category:** Research Methods

**Topic Significance and Study Purpose/Background/Rationale:** The objective is to analyze the Theory of Symptom Self-Management (TSSM) as a framework from which to derive nursing interventions for management of musculoskeletal pain in women with ovarian cancer (OC) treated with paclitaxel. Symptom management in OC is poorly understood. With 204,000 women diagnosed annually, OC continues to have the highest mortality rate of all cancers affecting the female reproductive system. However, recent advances in chemotherapy have increased survival rates prompting the need for a better understanding of treatment-related side effects. Musculoskeletal pain is a commonly reported treatment-related side effect in women with OC. Although clinically reported by patients, there are no currently effective interventions due to the lack of theoretically based research that addresses the etiology, assessment, and management of musculoskeletal pain during and post-treatment. Improving conceptual clarity will lead to better measurement and treatment. The need for this research is highlighted by the World Health Organization, the Institute of Medicine, and the Oncology Nursing Society.

**Methods, Intervention and Analysis:** The purpose is to assess the TSSM as a framework for directing nursing interventions that manage the symptoms of women with OC. Theories comprising the TSSM include the Theory of Unpleasant Symptoms (TOUS) and Bandura's Theory of Self-Efficacy. The TSSM will be evaluated using the middle-range criteria proposed by Peterson and Bredow.

**Findings and Interpretation:** The evaluation process of the TSSM will be measured in accordance with the internal and external domains of critique. Areas for internal critique include: (1) adequacy, (2) clarity, (3) consistency, (4) logical development, and (5) level of theory development. Areas for external critique include: (1) complexity, (2), discrimination, (3) reality convergence, (4) pragmatic, (5) scope, (6) significance, and (7) utility. Each of these areas will be evaluated and rated to critically appraise the benefit the TSSM has in directing nursing interventions that manage the symptoms of women with OC.

**Discussion and Implications:** The effectiveness of the TSSM for use in research will be discussed based on the internal and external critique as set forth by Peterson and Bredow. Our hypothesis is that the TSSM will serve as an appropriate framework for nursing interventions that address symptom management needs in OC patients.

## C2-0036

## CANCER CARE COORDINATION ACROSS MULTIPLE SETTINGS: CONCEPTS AND MEASUREMENT.

Laurel Radwin, RN, PhD, Manchester Veterans Administration Medical Center, Manchester, NH; Howard Cabral, PhD, MPH, Boston University School of Public Health, Boston, MA; Bonnie Jennings, DNSc, RN, FAAN, Emory University, Atlanta, GA

**Underwriting or Funding Source:** Department of Veterans Affairs, Veterans Health Administration, VISN1 Research Enhancement Fund

**Poster Category:** Research Methods

**Topic Significance and Study Purpose/Background/Rationale:** Because many cancer patients' care involves multiple settings and multiple disciplines, nurse navigation is highly desired. Lack of sound coordination during transitions across settings results in (1)needless morbidity and mortality for patients who "fall through the cracks"; (2) wasting scarce health care dollars; and (3)compromised patient-centered cancer nursing care (PCC-N). A sound conceptual model (CM), middle range theory (MRT) measurement (M) framework provides precision when studying complex care. Along with providing rigor, the framework helps to overcome criticisms from scientists and clinicians about the unnecessary loss of both the veracity and useful of study findings when models, theories, and measurement are not highly related. The purpose of this project was to devise a CM-MRT-M framework to study care coordination.

**Methods, Intervention and Analysis:** The Quality Health Outcomes Model served as the CM. In previous investigations, an MRT of PCC-N was derived from patients' perceptions of quality care and subsequently tested in hospitalized urban cancer patients seen in a single setting. Findings from this latter multivariable study were clinically and statistically significant. In the project reported here, the PCC-N theory was expanded to examine care across settings. We searched the literature using strategies/search terms from high quality systematic reviews (e.g., AHRQ, Cochrane Collaboration, etc.). The literature provided: (1) theoretical definitions of key concepts, (2) empirically supported relationships among concepts, and (3) measures.

**Findings and Interpretation:** Our project resulted in an expanded theory describing PCC-N for cancer patients who transition among settings. Many of the relationships were supported by previous study findings, yet some relationships were newly derived. New concepts, relationships and measures included: (1) types of continuity from the patients' perspective that relate to patients' perceptions of coordination; (2) clinicians' perceptions of factors that affect coordination; (3) clinician activities that affect coordination. Measures congruent with the concepts' theoretical definitions included (1) administrative and patient record data, and (2) clinician and patient surveys.

**Discussion and Implications:** More often than not, dollars for nurse navigators to coordinate care are not available. Although cancer care coordination is a multidisciplinary concern, cancer nurses' roles cannot be underestimated. Building sound coordination science depends upon clear conceptualization and measurement.

## C2-0098

## REVIEW OF METHODOLOGICAL ISSUES IN STUDYING ADHERENCE TO ORAL ENDOCRINE THERAPY IN BREAST CANCER.

Jennifer Milata, MSN, RN, ACNS-BC, Indiana University, Indianapolis, IN; Janet Carpenter, PhD, RN, FAAN, Indiana University, Indianapolis, IN

**Underwriting or Funding Source:** Grant # 2T32 NR007066 from the National Institute of Nursing Research

**Poster Category:** Research Methods

**Topic Significance and Study Purpose/Background/Rationale:** Endocrine therapy is a critical part of adjuvant therapy in women with hormone receptor-positive breast cancer. Women are non-adherent to these therapies following treatment for breast cancer even though they have been shown to reduce the risk of recurrence and death. Understanding adherence is important to establishing the extent of the clinical problem and need for possible interventions. The purpose was to review published research on adherence to oral endocrine therapy in women who have been diagnosed with breast cancer.

**Methods, Intervention and Analysis:** The PubMed search engine with MeSH terms were used to identify relevant literature. Of 116 titles reviewed, 56 full text articles were reviewed with 18 meeting criteria for inclusion in this review. Inclusion criteria were: English language, female subjects only, adherence was the primary outcome, and were primary sources (not review articles). Information on adherence definitions, measures, timing of assessments, and specific medications prescribed was abstracted into a table and evaluated.

**Findings and Interpretation:** Methodological issues related to measuring adherence were identified. Overall, measurement of adherence with self-report, pill counts, provider rating, and pharmacy records are susceptible to bias. This bias may lead to over or under-reporting of the true occurrence of non-adherence. Providers over estimated adherence and patients over reported adherence. In addition, assessing prescription refills and medication possession ratios collected through database reviews indirectly measure adherence. These provide information only on whether or not the medication was available, not whether or not it was actually taken as prescribed.

**Discussion and Implications:** More studies are needed to increase understanding of the underlying reasons for non-adherence with improved methods of adherence measurement. The review demonstrates both the reliance of researchers on indirect measures of adherence and the difficulty of understanding adherence rates due to varied methods of measurement. The assessment of adherence is a complex task that requires a unique approach. Unfortunately, direct observation of adherence is not feasible, and currently there are no reliable or valid blood or urine tests available to measure oral endocrine therapy adherence. More descriptive research is needed on the underlying processes influencing medication non-adherence to facilitate intervention development.

## C2-0085

## EVEROLIMUS-ASSOCIATED ADVERSE EVENTS IN POSTMENOPAUSAL WOMEN WITH HORMONE RECEPTOR–POSITIVE ADVANCED BREAST CANCER—UPDATED RESULTS FROM BOLERO-2.

Cynthia Campbell-Baird, RN, OCN®, Penn State Hershey Medical Center, Hershey, PA

**Underwriting or Funding Source:** Novartis

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Comprehensive knowledge of adverse events (AEs), including time of onset and rate of discontinuation, allows oncology nurses to promote patient compliance and treatment efficacy, ultimately impacting quality of life. Everolimus (EVE), an mTOR inhibitor, has been approved in combination with exemestane (EXE) as a strategy to overcome endocrine resistance in patients with HR+ advanced breast cancer (BC). This analysis evaluates safety data obtained at 18-month median follow-up during the BOLERO-2 trial, focusing on incidence of EVE/EXE-associated AEs, proportions of patients requiring dose modification/discontinued therapy because of AEs, and ways for oncology nurses to apply this knowledge to daily practice.

**Methods, Intervention and Analysis:** BOLERO-2 was a double-blind, placebo-controlled, phase 3 study evaluating EVE (10 mg/day) or placebo in combination with EXE (25 mg/day) in postmenopausal women (N=724) with ER+/HER2- advanced BC refractory to letrozole or anastrozole.

**Findings and Interpretation:** At 18-month follow-up, stomatitis (all grades) was the most common mTOR-related AE for EVE+EXE versus PBO+EXE (59% vs 12%). Other common class-specific AEs (all grades) included infection (52% vs 25%), rash (39% vs 7%), noninfectious pneumonitis (20% vs <1%), and hyperglycemia with new-onset diabetes (16% vs 3%). Grade 3 class-effect AEs occurred in <10% of EVE+EXE-treated patients. Grade 4 infection (1.5%) and hyperglycemia (0.4%) were uncommon; no grade 4 stomatitis or noninfectious pneumonitis was observed. 38% and 3% of patients in the EVE+EXE and PBO+EXE groups, respectively, required <1 dose reduction because of an AE. Median duration of dose interruption and dose reduction was 7 and 29 days, respectively. Treatment discontinuation due to AEs occurred in 26% and 5% of EVE+EXE and PBO+EXE groups, respectively. AEs (<1%) leading to discontinuation in the EVE+EXE arm were noninfectious pneumonitis (5.6%), stomatitis (2.7%), dyspnea (2.3%), fatigue (1.9%), and rash (1.7%).

**Discussion and Implications:** EVE-associated AEs were typically mild to moderate, and infrequent grade 3/4 events were adequately managed using established recommendations. Thorough understanding of EVE/EXE-associated AEs and their timely management will assist oncology nurses in assessment, implementation, and management plans, leading to improved care for patients receiving EVE/EXE therapy.

## C2-0105

## DO SEDENTARY COLORECTAL CANCER SURVIVORS VIEW LACK OF EXERCISE AS A RISK FACTOR FOR CANCER RECURRENCE?

Rachel Hirschey, BSN, RN, Duke University, Durham, MA; Isaac Lipkus, PhD, Duke University, Durham, NC; Lee Jones, PhD, Duke University, Durham, NC; Wendy Demark-Wahnefried, PhD, RD, UAB Comprehensive Cancer Center, Birmingham, AL; Richard Sloane, MPH, Duke University, Durham, NC

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Among colorectal cancer (CRC) survivors, higher levels of exercise post-diagnosis are related to lower risk of cancer recurrence, and cancer-specific and all-cause mortality. Nurses can play a pivotal role in developing educational interventions targeting CRC survivors about the associations between exercise and CRC recurrence, mortality and quality of life. To better inform such interventions, insights are needed as to whether CRC survivors perceive lack of exercise as a risk factor for their cancer recurrence, and whether such perceptions are linked to constructs that can promote exercise, such as survivors' risk perception and worry of recurrence. We explored these associations among early stage (Stage I and II) CRC survivors.

**Methods, Intervention and Analysis:** A total of 148 sedentary CRC survivors completed a baseline survey. Participants were 6 months to 5 years post cancer diagnosis and self-reported engaging in less than the recommended 150 minutes/week of moderate and strenuous intensity exercise (M=40.3). Overall, mean age was (64.8), 85.1% were Caucasian, and 51.4% were women. Participants were asked, "What if anything, may cause your cancer to come back". They were also asked about their lifetime risk of recurrence (1=no chance to 7=certain to happen), how often during the past month they worried about recurrence (1=not at all to 5=almost all the time), and how effective exercise is to reduce chance of recurrence (1=not at all to 7=completely effective).

**Findings and Interpretation:** Overall, 18% (n=26) reported lack of exercise as a risk factor for CRC recurrence. Thus, survivors who reported lack of exercise as risk factor, compared to those who did not, perceived themselves at higher risk of recurrence (M=4.3 vs. 3.4, p<.0008), worried more about recurrence (M=1.8 vs. 2.4, p<.02), and viewed exercise as a more effective method to reduce recurrence (M=4.9 vs. 6.3, p<.0006).

**Discussion and Implications:** Results suggest that among sedentary CRC survivors few report lack of exercise as a risk factor for CRC recurrence. Nursing interventions can increase knowledge that lack of exercise is a factor in cancer recurrence.

## C2-0118

## PROPHYLACTIC NAPROXEN OR LORATADINE FOR BONE PAIN IN PATIENTS WITH BREAST CANCER RECEIVING CHEMOTHERAPY AND PEGFILGRASTIM: A RANDOMIZED, PHASE 2 STUDY (NOLAN) AMGEN 20110147; NCT 01712009.

Andrew S. Guinigundo, RN, MSN, APN-BC, CNP, Oncology Hematology Care, Inc., Cincinnati, OH; Cathy Maxwell, RN, OCN®, Advanced Medical Specialties, Miami, FL; Linda Vanni, RN, MSN, ACNS-BC, NP, Pain Management, Providence Hospital, Southfield, MI; Holly Watson, RN, MS, ANP-BC, Global Development, Amgen Inc., Thousand Oaks, CA; Sejal Badre, MS, Global Biostatistical Sciences, Amgen Inc., Thousand Oaks, CA; Jeffrey J. Kirshner, MD, Hematology/Oncology Associates of Central New York, East Syracuse, NY

**Underwriting or Funding Source:** Amgen sponsored clinical trial. Andrew Guinigundo, Cathy Maxwell and Linda Vanni received reimbursement and travel expenses for their work as consultants on the development of this study. Cathy Maxwell has received honoraria and travel for her work on advisory boards for Amgen and speakers bureau for Amgen, Abraxis, Bayer, Celgene, Eisai, Merck, Novartis, Pfizer, and Spectrum. Andrew Guinigundo has received honoraria and travel expenses for his work on the speakers bureau for Amgen, Celgene, and Pfizer and for advisory board for Eisai. Holly Watson and Sejal Badre are employees and stockholders in Amgen, Inc. Jeffrey Kirshner received research funding, is study chair, and has worked as a consultant for Amgen Inc.

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Oncology nurses and advanced practice nurses (APN) prevent and manage treatment-related side effects of patients with cancer. Bone pain is the most commonly reported adverse event (AE) associated with pegfilgrastim. NSAIDs and antihistamines are used by oncology nurses to reduce this AE; however, there are limited data to support the safety and efficacy of the prophylactic administration of these interventions when given over multiple chemotherapy cycles. Evidence regarding the effectiveness and safety of these interventions would be of value. NOLAN compares prophylactic naproxen to prophylactic loratadine to no prophylactic medication for the purpose of decreasing pegfilgrastim/chemotherapy-related bone pain. Primary endpoint: To estimate the difference in cycle 1 bone pain among treatment groups (naproxen, loratadine, or no prophylactic medication). Key Secondary endpoint: To estimate the difference in bone pain among treatment groups across all cycles. AEs associated with prophylactic administration of naproxen and loratadine are being evaluated.

**Methods, Intervention and Analysis:** Six hundred patients will be enrolled. Women with newly diagnosed, chemotherapy-naive, stage I-III breast cancer, planning >4 cycles of chemotherapy with pegfilgrastim support are eligible. Exclusions include: chronic pain or chronic pain treatment, renal insufficiency, and a history of GI bleeding/ulcers. Patients are randomized 1:1:1 to naproxen 500mg BID versus loratadine 10mg daily versus no prophylaxis in 5 days starting the day of pegfilgrastim administration. Bone pain data are collected as AE, and as recorded in patient journals on a 0-10 scale. Journals are completed for 5 days beginning the day of pegfilgrastim injection for 4 chemotherapy cycles. Analyses will be stratified by age (<65 years versus >65 years) and chemotherapy (taxane versus non-taxane). The clinical hypothesis is that an absolute reduction of 10% in all grade bone pain in the intervention arms as compared to the control arm could suggest a clinical benefit.

**Findings and Interpretation:** This study is in progress. Results are expected mid-2014.

**Discussion and Implications:** NOLAN will provide clinically important efficacy and safety information regarding the use of prophylactic medications to reduce the incidence and/or severity of bone pain in patients with breast cancer receiving chemotherapy and pegfilgrastim. Study results will give oncology nurses additional information for formulating evidence-based patient care.

## C2-0163

## ORAL CHEMOTHERAPY: CAUSES FOR DISCONTINUATION AND NON-ADHERENCE.

Susan Schneider, PhD, RN, AOCN®, FAAN

**Underwriting or Funding Source:** National Cancer Institute (R15CA139398)

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** While cancer patients express a preference for oral medications, adherence to these medications varies. Previous studies have shown that the availability of medication procurement resources, proper self-administration, knowledge of drug interactions, and monitoring/reporting of symptoms contribute to adherence. Patients who successfully adhere to regimens have a greater chance of non-recurrence and long-term quality of life. Understanding deterrents to adherence can help nurses to address barriers and promote successful treatment outcomes. The self-regulatory model of adherence identifies key factors such as patient knowledge, behavioral skills, and affective support that can be barriers to medication adherence.

**Methods, Intervention and Analysis:** The aims of this analysis were to 1) identify the reasons patients were discontinued from an oral chemotherapy regimen and 2) delineate barriers to adherence in adult oncology patients who were started on a new oral chemotherapeutic agent. This is a secondary analysis of a study which examined the effectiveness of a tailored protocol to promote adherence to oral chemotherapeutic agents in 48 adults. Adherence rates in this sample ranged from 65-95% over a sixth month period. Patients were asked to provide reasons for non-adherence. Responses were categorized based on the self-regulatory model. Common reasons for lack of adherence included, lack of understanding of medication regimen, side effects, forgetting to take medication and system barriers. System barriers (late pharmacy deliveries and lack of coordination by providers) interfered with adherence in 10% of participants. Chart reviews were conducted to determine the reason that 25% of patients where discontinued from their regimen. The three most common reasons for oral chemotherapy discontinuation were; unable to tolerate side effects, disease progression and cost/insurance issues. Case studies which delineate barriers to adherence will be presented.

**Findings and Interpretation:** Reasons for discontinuation/non-adherence in this sample were consistent with those in the literature. System barriers to adherence were higher than predicted and are often not identified in the literature.

**Discussion and Implications:** Working with the health care team nurses can promote smooth care transitions and be creative

supporting individuals who are not seen regularly in a clinic setting. The findings of this study emphasize the importance of symptom monitoring/ management as a way to promote oral chemotherapy adherence.

## C2-0079

## A FAITH-BASED CANCER OUTREACH AND EDUCATION PROGRAM.

Shannon Harrington, PhD, MSN, BSN, RN, Dana-Farber Cancer Institute/UMass Boston, Boston, MA; Sharon Houston, MSW, Gethsemane Community Fellowship Baptist Church, Norfolk, VA

**Underwriting or Funding Source:** American Cancer Society and Wal-Mart Foundation

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** African American (AA) women in the cities of Portsmouth and Norfolk experience some of the highest breast cancer mortality rates in Virginia. Gethsemane Community Fellowship Church implemented the "Living Out Loud"program of the regional Beat Breast Cancer initiative, providing health education to AA women age 40 and older. The goals for the experiential and educational program were 1) encourage women to get mammograms; and 2) educate women about adopting healthy behaviors for cancer prevention.

**Methods, Intervention and Analysis:** AA women were recruited using various marketing and multimedia tools and community outreach initiatives. In March, 25 AA women attended the 4 week program including weekly 2-hour sessions comprised of breast cancer, nutrition and exercise education and hands-on activities. An assessment of breast cancer knowledge, knowledge of basic healthy eating and physical activity recommendations was administered prior to the first educational session. A Breast Cancer IQ game with prizes was used to evaluate participants' ability to apply the information learned from the breast cancer 101 lecture, plus a pre-test review and discussion of correct answers was conducted at the end of the session.

**Findings and Interpretation:** One-hundred AA women age 40 and older were given information about free mammography screenings, and 100 women participated in one of four month-long health education programs between the months of March-June. Median knowledge pretest scores from week 1 were 77% accurate; range 29%-100%. Attendance rates at all sessions ranged from 92%-100% with a median of 97%. Engaging the participants in an interactive review (Breast Cancer IQ game and pre-test review and discussion) of the material presented encouraged fun and non-intimidating application of knowledge gained. Program participants enjoyed the program and gave specific examples of how the fellowship among their church family, and the casual and familiar environment made the learning process fun and effective.

**Discussion and Implications:** In summary, faith-based interactive education programs may be a feasible method to deliver breast health promotion to AA women. Future research can be conducted to understand the impact that the program might have on breast cancer screening and health behavior outcomes.

## C2-0123

## SLEEP-WAKE DISTURBANCES IN LUNG CANCER: A COMPLEX CLINICAL PROBLEM.

Grace Dean, PhD, RN, University at Buffalo, Buffalo, NY; Suzanne Dickerson, DNS, RN, University at Buffalo, Buffalo, NY

**Underwriting or Funding Source:** Oncology Nursing Society and National Lung Cancer Partnership

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Sleep-wake disturbances have been implicated in cancer-related fatigue and poorer quality of life (QOL). Little is known about the illness and treatment trajectory related to sleep disturbances of individuals with lung cancer. The purpose of this study was to provide exploratory qualitative and quantitative data on sleep-wake disturbances and QOL in individuals before, during and after treatment for non-small cell lung cancer (NSCLC).

**Methods, Intervention and Analysis:** A mixed method design used data collected at four time points (diagnosis, after the first and second chemotherapy treatments and at 6 months) in individuals newly diagnosed and scheduled for chemotherapy for inoperable NSCLC. Data from subjective and objective instruments evaluating sleep quality, daytime sleepiness and QOL outcomes were obtained from participants from VA Medical Center and a comprehensive cancer center. Concurrent with data collection, qualitative illness narratives were obtained to explore the participant experience of lung cancer and the effect on sleep patterns. Qualitative data were analyzed using interpretive phenomenology. Quantitative data were analyzed using descriptive statistics, correlations and paired t-tests. Matrices were created to compare and contrast both data sets to synthesize results.

**Findings and Interpretation:** Among 29 participants, the mean age was 67 years, male (62%), Caucasian (83%), married (45%), retired (42%) with at least a high school education (77%). Mean nocturnal sleep quality was poor prior to treatment and did not significantly change during or after treatment. Poor sleep was related to poor QOL and increased symptoms. Qualitative illness narratives were congruent with the quantitative measures demonstrating similar individual worsening or improvement in sleep overtime. Narratives enlightened the role of hope in tolerating symptoms consistent with QOL scores reflecting a tendency for positive attitudes and embracing hope at the end of life.

**Discussion and Implications:** This study provides insight for oncology nurses to intervene to improve sleep and QOL in individuals before, during and after treatment for NSCLC. Future research with larger samples will help elucidate physiologic (disease specific), behavioral (sleep hygiene), or emotional causes (anxiety and depression with terminal illness).

## C2-0140

## CANCER-RELATED SYMPTOM CLUSTERS, PREDICTOR VARIABLES AND COMPARABILITY ACROSS STATISTICAL MODELS AND CANCER DIAGNOSES.

Alice Noquez, PhD, FNP-BC, National University, San Diego, CA; Barbara Piper, PhD, AOCN®, FAAN, National University, San Diego, CA; Dale Glaser, PhD, Glaser Consulting, San Diego, CA

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Symptom cluster research has the potential to improve cancer nursing practice, but remains fraught with several methodological issues. Few studies have examined the consistency of symptoms that cluster together using different advanced statistical methods. Published findings also reveal a lack of agreement on how demographic and other variables may be related to or predictive of clusters. Since it remains to be seen how symptom cluster research will improve practitioner assessments and targeted interventions, this need served as the study's impetus. Lenz's Theory of Unpleasant Symptoms guided this study.

**Methods, Intervention and Analysis:** This exploratory cross-sectional study involved 465 adult cancer patients predominantly Caucasian and 58.6 years old with 8 different cancer diagnoses (breast, prostate and brain the most common) selected from a larger data set (n=1687). Eligibility criteria included patients

who were <18 years old and had complete data on the standardized Brief Symptom Inventory-18 and the Common Problems Checklist. Two-Step Cluster Analysis (SPSS Version 20) and Latent Profile Analysis (Mplus Version 7) were used to identify clusters and results of these two methods were compared. A sequential approach to multiple logistic regression was used to identify which demographic variables and common problems were related to and predictive of cluster membership.

**Findings and Interpretation:** Anxiety, depression, somatization, pain, and fatigue clustered into two distinct groups: low symptom and high symptom intensity with high agreement found between the two statistical methods (Cohen's = .901, p < .001). Variables predictive of membership across both analytic methods included age, gender, diagnosis, communication with family, hospice care and loss of faith.

**Discussion and Implications:** These findings suggest that nurses should assess for these co-occurring symptoms and common problems. Patients who have hospice-related concerns, perceived lack of effective communication with family members and loss of faith may be at risk of higher intensity symptoms. Providing resources to support patients experiencing these problems may help prevent the escalation of these symptoms within the cluster. This is one of the first studies to compare and find convergence between symptom clusters using these advanced statistical methods. Replication of these findings in longitudinal studies with more homogeneous samples is warranted.

## C2-0049

## MAXIMIZING FEASIBILITY DESIGN, COLLECTION AND REPORTING.

Marie Flannery, RN, PhD, AOCN®, University of Rochester School of Nursing and Wilmot Cancer Center, Rochester, NY; Judy Brasch, RN, MS, University of Rochester School of Nursing, Rochester, NY; Nancy Wells, RN, DNSc, Vanderbilt University Medical Center and School of Nursing, Nashville, TN

**Underwriting or Funding Source:** ONS Foundation

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** A primary aim of all pilot studies is determining feasibility yet this important research outcome is often not fully envisioned. Researchers have reported that literature reviews of published pilots frequently emphasize between group testing and findings rather than the appropriate focus of feasibility results. When presented, data on feasibility is often minimal. Frameworks for the conduct of pilot work emphasize the inclusion of multiple feasibility data such as recruitment rates, completion rates, and testing procedures, measures and outcomes. Feasibility assessment emphasizes that things run smoothly, are acceptable to participants, identifies required resources and tests all study implementation components. Careful and comprehensive design of feasibility measures is essential. Currently available methods of real time electronic data capture can maximize the integration and simultaneous collection of detailed data on feasibility.

**Methods, Intervention and Analysis:** Design, conduct and results from a pilot randomized clinical trial testing the delivery of a theoretically derived telephone delivered intervention to improve symptom management for individuals with advanced lung cancer receiving active treatment are presented. We designed feasibility measures for 1) recruitment (9 variables plus comments), 2) outcomes (6 variable plus comments), and 3) interventions (6 variables plus comments). Data plan is to collect at each measurement point for the repeated measures design conducted by telephone included 4 outcome calls ( N=180) and 8 intervention calls (N=240). Use of electronic data capture methods prompts the researcher to complete the feasibility measure and at each point and provides a message if measures are not completed.

**Findings and Interpretation:** Results will be presented in detail including: Intervention: 75% call completion on first schedule (reasons for reschedule tracked); 100% completion of intervention measures; average time for intervention 58% 0-15 minutes, 23% 16-30 minutes Outcome calls: 57% completion on first schedule ( reasons for reschedule tracked); 88% completion of all items on measures (12% refusal individual items); average time 47% 0-15 minutes, 52% 16-30 minutes

**Discussion and Implications:** Careful attention to design of feasibility measures and data collection schedules and procedures provides for detailed pilot support for the conduct of the large scale study. Detailed reporting provides an exemplar case for other researchers.

## C2-0012

## THE INFLUENCE OF OXIDATIVE STRESS ON SYMPTOM OCCURRENCE, SEVERITY AND DISTRESS DURING CHILDHOOD LEUKEMIA TREATMENT.

Marilyn Hockenberry, PhD, RN, PNP-CS, FAAN, Duke University School of Nursing, Durham, NC; Ida M. (Ki) Moore, PhD, RN, FAAN, University of Arizona, College of Nursing, Tucson, AZ; Olga Taylor, MPH, Baylor College of Medicine, Texas Children's Cancer Center, Houston, TX; Alice Pasvogel, PhD, University of Arizona, College of Nursing, Tucson, AZ; Cheryl Rodgers, PhD, RN, CPNP, Duke University, School of Nursing, Durham, NC; Kathy McCarthy, BSN, RN, Baylor College of Medicine, Texas Children's Cancer Center, Houston, TX

**Underwriting or Funding Source:** NR010889 Childhood Leukemia: Oxidative Stress, Cognitive Changes and Academic Outcomes

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Children with cancer experience multiple symptoms resulting from their disease and treatment. Limited research exists on the role physiologic biomarkers may play in evaluating the severity of symptoms experienced by pediatric oncology patients. The association between F2-isoprostanes (F2-IsoP) and the inflammatory pathway, along with its reliability as a measure of oxidative stress, provides additional strength for using this biomarker to explore biochemical mechanisms of symptoms during childhood leukemia therapy. The purpose of this study was to explore the symptom trajectory during the first 16 months of childhood leukemia treatment. The influence of the oxidative stress pathway, measure by cerebral spinal fluid (CSF) F2-IsoP, on symptom occurrence, severity and distress during this time period also was explored.

**Methods, Intervention and Analysis:** This study used a prospective longitudinal design to evaluate the symptom trajectory and the influence of the oxidative stress pathway over six time periods during leukemia treatment. Symptoms were measured using the Memorial Symptom Assessment Scale (MSAS). The scale asks questions related to the symptoms experienced during cancer treatment, their severity and how much distress they create; higher MSAS scores indicating more frequent, severe and distress-causing symptoms. Biochemical changes in oxidative stress were measured by the biomarker F2-IsoP, in the CSF of 36 children with ALL during the first 16 months of cancer treatment.

**Findings and Interpretation:** Significant differences were found in the number of symptoms experienced during the three phases of leukemia treatment. Children experienced more symptoms during the induction and post-induction phases of leukemia therapy. Symptom severity ranged from slight to moderate and symptom distress ranged from little to quite a

bit throughout the entire trajectory period. F2-IsoP CSF levels significantly correlated with symptom frequency during post induction and continuation treatment phases.

**Discussion and Implications:** This study is the first to reflect symptom trajectory changes over 16 months of childhood leukemia treatment and the influence of the oxidative stress pathway on symptom frequency, severity and distress. Children with leukemia continue to experience symptoms throughout treatment. Physiologic measures indicate the influence of the oxidative stress pathway on symptom occurrence, severity and distress.

## C2-0029

## CLINICIAN PERCEPTIONS OF COMMUNICATION ABOUT SYMPTOMS AND QUALITY OF LIFE ISSUES IN PATIENTS WITH CANCER.

Meghan Underhill, PhD, RN, AOCNS®, Dana-Farber Cancer Institute, Boston, MA; Lisa Kennedy-Sheldon, PhD, APRN-BC, U Mass Boston, Boston, MA; Barbara Halpenny, MA, DFCI, Boston, MA; Donna Berry, PhD, RN, AOCN®, FAAN, DFCI, Boston, MA

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Health providers, especially those in oncology care, have the responsibility to listen to patient reports of symptom and quality of life issues (SQIs) and then intervene to maximize the efficacy and safety of therapy to improve patient outcomes. In order to address this integral component of clinical practice, Berry et al. developed and tested the Electronic Self Report Assessment-Cancer (ESRA-C). The present study is the secondary aim of the ESRA-C II trial and describes provider perceptions of patient-initiated communication regarding common or sensitive SQIs (cancer-related fatigue, fear/worry, sexual activities and interest) and strategies or processes providers use to address these SQIs within practice.

**Methods, Intervention and Analysis:** This was a descriptive study using qualitative data collection and analysis methods. Study design was guided by Social Information-Processing theory. Eligible participants were Dana-Farber Cancer Institute medical doctors or nurse practitioners who participated in the parent study. Audio-recorded vignettes were simulated based on actual recorded clinic visits from the ESRA-C II trial. Semi-structured cognitive interviews were completed with 12 participants. Analysis was completed using content analysis methods.

**Findings and Interpretation:** Analysis identified 4 distinct themes. Overall, the major component of all themes was the complexity that occurred when communicating about SQIs. Approaching SQIs occurred within a specific institutional and clinical context. For these specific symptoms, participants felt that approaching them inside and outside of the clinic was complex and required ongoing communication within a multidisciplinary team (ie: medicine, nursing, social work, psycho-oncology, etc.) both to gather information and manage the SQI. Forming a relationship with the patient was one strategy that facilitated approaching SQIs. Most participants expressed a need for guidance, support, and education in approaching SQIs within the clinic. This was discussed despite level of experience. Participants requested self, peer, and patient evaluation of their communication.

**Discussion and Implications:** Providers perceived approaching SQIs as a routine part of interdisciplinary clinical care. The type of symptom and complexity of its management influence how providers approach the SQI. Findings have implications for provider training, evaluation, and program development.

## C2-0034

## PREDICTORS OF ASSESSMENT OF CANCER PATIENT PSYCHOSOCIAL CONCERNS.

Lisa Kennedy Sheldon, PhD, APRN-BC, AOCNP®, University of Massachusetts–Boston, Boston, MA; Dany Hilaire, RN, OCN®, University of Massachusetts–Boston, Boston, MA; Fangxin Hong, PhD, Dana-Farber Cancer Institute, Boston, MA; Traci Blonquist, MS, Dana-Farber Cancer Institute, Boston, MA; Donna L. Berry, PhD, RN, AOCN®, FAAN, Cantor Center at Dana-Farber Cancer Institute, Boston, MA

**Underwriting or Funding Source:** ONS Foundation

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Psychosocial concerns and distress often arise during cancer treatment. Communication about these concerns is an important component of cancer care. Nurses and other healthcare providers need to initiate discussion with patients about these concerns to identify treatable conditions. The purpose of this study was to examine patient-provider communication about psychosocial concerns, identify symptoms associated with distress, and identify predictors of assessment of distress during cancer treatment.

**Methods, Intervention and Analysis:** Secondary analysis of an existing dataset of 518 self-reports of selected symptoms and quality of life (QOL) concerns (SQLI) of adults with cancer (global QOL, fatigue, insomnia, appearance, social and role functioning, outlook, appetite), plus audiofiles of patient-provider communication during on-treatment, ambulatory visits. The sample for this analysis (N=89) included all distressed patients in the parent trial (n=66) identified by self-report measures of depression (Patient Health Questionaire-9>10) and/or poor emotional functioning (EORTC Quality of Life Questionnaire-Emotional Functioning subscale<50), and a randomly selected sample of participants without distress (n=23). Audiofiles were coded for discussion of symptoms in the parent trial, and patient statements of psychosocial concerns (cues) and provider initiation/responses were coded using the Medical Interview Aural Rating System.

**Findings and Interpretation:** Distressed patients were younger, female and had significantly higher symptom burden, especially fatigue. Overall, there were 222 cues for analysis; 183 from 46 distressed patients, 39 from 9 nondistressed. 34 patients had no psychosocial cues during a visit (20 distressed, 14 nondistressed). By group, 70% of distressed patients and 39% of nondistressed had at least one psychosocial cue/visit. Distressed patients had significantly more cues overall (x=2.77/visit) when compared to nondistressed (x=1.7/visit). Providers initiated only 62% of discussions overall and there was no statistical difference in provider initiation of at least one discussion between the groups despite providers having SQLI reports with distress measures.

**Discussion and Implications:** Distressed patients reported higher symptom burden and gave more cues. One third of distressed patients did not have providers initiate conversations about psychosocial concerns. Younger, female patients with cancer may be at greater risk for psychosocial distress and symptom burden. Providers need to initiate discussions regarding distress with patients at risk. Further exploration is needed to understand provider barriers to assessment of distress.

## C2-0038

## SYMPTOMS AND QUALITY OF LIFE IN RECTAL CANCER SURVIVOR SUBGROUPS.

Tracy Gosselin, PhD, RN, AOCN®, Duke Cancer Institute, Durham, NC; David Abbott, MS, MCS, Durham Veterans Affairs Epidemiologic Research and Information Center, Durham, NC; Susan Beck, PhD, APRN, FAAN, AOCN®, University of Utah, College of Nursing, Salt Lake City, UT; Patricia Berry, PhD, RN, ACHPN, FPCN, FAAN, University of Utah, College of Nursing, Salt Lake City, UT; Lee Ellington, PhD, University of Utah, College of Nursing, Salt Lake City, UT; Steven Grambow, PhD, Durham Veterans

Affairs Epidemiologic Research and Information Center and Duke University Department of Biostatistics and Bioinformatics, Durham, NC; Dawn Provenzale, MD, MS, FACG, Durham Veterans Affairs Epidemiologic Research and Information Center and Duke University School of Medicine, Durham, NC

**Underwriting or Funding Source:** Parent study: Grants from the National Cancer Institute (U01 CA93324, U01 CA93326, U01 CA 93329, U01 CA93332, U01 CA 93339, U01 CA 93344, and U01 CA93348) and the Department of Veteran Affairs (CRS 02-164). Secondary analysis: American Cancer Society Doctoral Scholarship DSCNR-07-131-03

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** In 2013, approximately 40,340 Americans will be diagnosed with rectal cancer. Patients with localized or regional disease have an overall 5-five year survival rate of 90% and 70%, respectively. As this group of survivors continues to grow, it is important to understand the symptom experience after treatment and its impact on outcomes of care. While data show that rectal cancer survivors experience a variety of symptoms after treatment is concluded, little is known about which characteristics place survivors at greatest risk. As oncology nurses it is critical that we understand the unique survivorship needs of this population.

**Methods, Intervention and Analysis:** We undertook a secondary analysis of 275 survivors of rectal cancer from the Cancer Care and Outcomes Research and Surveillance Consortium study was undertaken. All survivors had undergone chemotherapy, radiotherapy, and surgery. Self-reported symptoms were measured using the European Organization for Research and Treatment of Cancer instruments 15 months after diagnosis. The physical and mental component subscales of the SF-12 were examined at 3 and 15 months after diagnosis. Measures of symptom experience were hierarchically clustered to form symptom defined survivor subgroups which were compared 15 months after diagnosis.

**Findings and Interpretation:** The overall sample was predominately male, Caucasian, and over 55 years of age. The most frequently reported symptoms were feeling worn out, tired, and having trouble sleeping. For the overall sample, SF-12 scores significantly increased from 3 to 15 months after diagnosis for both the PCS (from 36.5 to 41.6) and the MCS (from 45.6 to 50.2). Four symptom defined survivor subgroups (minimally symptomatic, tired and trouble sleeping, moderately symptomatic, and highly symptomatic) were formed. There were symptom differences amongst each survivor subgroup and a greater increase in PCS and MCS scores in the minimally symptomatic subgroup compared to the highly symptomatic subgroup.

**Discussion and Implications:** The examination of these survivor subgroups documents variability after treatment and demonstrates the need for the development of customized intervention strategies tailored to each subgroup's symptom burden. In particular, patients with the greatest symptom burden require earlier and more intensive supportive care.

## C2-0043

## IMPROVING A TREATMENT DECISION SUPPORT SYSTEM FOR MINORITY MEN WITH LOCALIZED PROSTATE CANCER.

Donna Berry, PhD, RN, AOCN®, FAAN, Dana-Farber Cancer Institute, Boston, MA; Martin Sanda, MD, Emory University, Atlanta, GA; Peter Chang, MD, Beth Israel Deaconess Medical Center, Boston, MA; Julia Hayes, MD, Dana-Farber Cancer Institute, Boston, MA; Barbara Halpenny, MA, Dana-Farber Cancer Institute, Boston, MA

**Underwriting or Funding Source:** E. David Mazzone Foundation

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** We have developed and tested the Personal Patient Profile-Prostate (P3P), an efficacious decision support intervention for men with localized prostate cancer (LPC). While the randomized trial included a diverse sample, earlier pilot work included a predominantly White sample. Usability evaluations in minority men, conducted parallel to the trial, suggested additional development needs for this web-based intervention.

**Methods, Intervention and Analysis:** The purpose of this study was to improve the linguistic appropriateness and cultural sensitivity of P3P for Black and Hispanic men. Employing an iterative development process, improvements in the user interface and navigation were made. Print and audio-visual (AV) versions of the Cultural Sensitivity Assessment Tool (CSAT) were applied to P3P by external reviewers. CSAT category scores range from 1 to 4. Average scores above 2.5 for print and 3.3 for AV materials are considered acceptable. The reading level of text was assessed pre- and post-revision using Flesch-Kincaid Grade Level and Flesch Reading Ease scores.

**Findings and Interpretation:** Four employees of the study institution who were not involved in design of the P3P and self-identify as Black or Hispanic bilingual/bicultural completed the CSAT. Average scores for all print categories (3.25 format, 3.09 written and 3.13 visual messages) exceeded minimum acceptability scores, while those for AV categories (2.75 format, 2.71 written and 2.90 visual messages) did not. Critical comments from reviewers centered on improving visual esthetics, removing redundancy in videos, adding a glossary, and adding family members to videos. Positive comments centered on statistical graphs, coaching, and navigation ease. Reviewers noted difficulties and redundancies applying the CSAT to an interactive website. The reading grade level of the P3P reduced from 8.7 to 7.7, and Reading Ease increased from 60.2 to 64.4.

**Discussion and Implications:** Reduction of reading level was successful as well as improving cultural sensitivity of the intervention content. The CSAT scores indicated need for additional improvement in some AV components. Enhancing the user interface to be more appealing and adding a glossary are two revisions that we have immediately addressed. The improved version of P3P will now be re-tested in minority men with a new diagnosis of LPC.

## C2-0046

## ASSESS THE KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING BREAST CANCER AMONG URBAN POPULATION OF KARACHI, PAKISTAN.

Falak Ahmed, RN, AKUH, Karachi, Pakistan; Shahroze Ali, RN, AKUH, Karachi, Pakistan; Huma Nayani, RN, King Faisal Hospital, Riyadh, Saudi Arabia; Sana Hirani, RN, AKUH, Karachi, Pakistan

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Breast Cancer has been known to be the most common cause of cancer, and second principal cause of cancer in women. It has been estimated that every one out of nine women develops breast cancer in Pakistan. Early detection allows for intervention and will optimize the life of individuals.

**Methods, Intervention and Analysis:** A Cross Sectional Descriptive study was carried out on 45 women in an urban community of Karachi Pakistan, on women age 30-70 years. A structured questionnaire was distributed assessing information on demographic profile, knowledge and attitude towards breast cancer.

**Findings and Interpretation:** Respondents were randomly recruited upon taking informed consent, the results reveled that merely 5.3% of people did not know how to perform self breast exam, where as 58.3 %knew but never applied whereas only

10% of them actually perform SBE. Moreover, It has also been assessed that 50 % had no knowledge regarding the effect of oral contraceptives on breast cancer and 54.2 % had no knowledge regarding breast mass or lymph node.

**Discussion and Implications:** The study shows insufficient knowledge of women regarding breast cancer and a real need for health education awareness programmes regarding breast cancer awareness and self breast examination. The role of a health care provider is of great importance in disseminating information into general public concerning the growing rate of breast cancer , which can be prevented and treated with new treatment modalities. Considering the importance of financial constraints its health care provider duty to educate people regarding its preventive measures.

## C2-0052

## RACIAL COMPARISON OF OUTCOMES FOR WOMEN NEWLY DIAGNOSED WITH BREAST CANCER.

Margaret Rosenzweig, PhD, FNP-C, AOCNP®, University of Pittsburgh School of Nursing, Pittsburgh, PA; Kathleen Slavish, MPH, University of Pittsburgh, Pittsburgh, PA; Adam Brufsky, MD, PhD, University of Pittsburgh, Pittsburgh, PA

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** The 13% five year survival disparity between Black and White women diagnosed with breast cancer is often attributed to late stage presentation of black women. Our team's research focuses on racial disparity during breast cancer treatment as a possible target for disparity reducing interventions. Purpose: To describe long term outcomes in African American breast cancer survivors as compared to those of stage and age matched white survivors. Specifically, we aim to: 1. Describe and compare long term breast cancer outcomes 2. Describe and compare adherence to annual post treatment cancer clinic visit and mammography

**Methods, Intervention and Analysis:** Setting was two urban medical oncology clinics. An IRB approved secondary analysis of a completed pilot study "The ACTS Intervention to Encourage Adherence to Recommended Breast Cancer Treatment" (Komen, POP33006) targeted black women with breast cancer. Trial was conducted January, 2007 through March, 2009. For a comparison group, White women receiving chemotherapy were matched 1:1 for age and breast cancer stage to study participants. T tests and matched pair analyses were used. Outcomes for this project were measured via retrospective chart review until December, 2012.

**Findings and Interpretation:** Mean age of total sample was 50.5 with 90% Stage 2 or higher, 41% of black women and 82% of white women were estrogen positive. Survival: Of completed black study patients 34/34 had follow up data available and were matched to white chemotherapy recipients. Among the 34 matched pairs, there were significantly worse outcomes for black women for survival (p= .003). Ten total patients were deceased, nine were black (90%). Of the black deceased patients eight (88%) were estrogen negative, and four (44%) did not receive initial chemotherapy as prescribed. Adherence to at least annual clinic visits was significantly less for black women than matched white (p=.000). Adherence to mammogram appointments was not significantly different by race but overall few women recurred (n=2) locally. Current literature implicates late stage presentation as the primary etiology for survival disparity. There are additional factors for consideration as evidenced by this stage matched analysis.

**Discussion and Implications:** Estrogen negativity and poor adherence to initial chemotherapy are also implicated delineating a high risk group possibly amenable to mitigating interventions.

## C2-0070

## RACIAL DISPARITIES IN ACUTE LEUKEMIA: A RETROSPECTIVE CHART REVIEW.

AnnMarie Walton, RN, MPH, OCN®, CHES, University of Utah College of Nursing, Salt Lake City, UT; Ashley Leak, PhD, RN-BC, OCN®, University of North Carolina School of Nursing, Chapel Hill, NC; Bob Wong, PhD, University of Utah College of Nursing, Salt Lake City, UT; Kathi Mooney, RN, PhD, University of Utah College of Nursing, Salt Lake City, UT

**Underwriting or Funding Source:** Doctoral Scholarship in Cancer Nursing Renewal, DSCNR-13-276-03 SCN from the American Cancer Society (Walton) and NCI R25 CA116339 (Leak)

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Latinos are considered a high risk group for lymphohematopoietic cancers, especially Acute Lymphocytic Leukemia (ALL). Data from the North American Association of Central Cancer Registries for 1997-2002 were used to assess patterns of leukemia incidence and it was found that Hispanics had a higher incidence of ALL, especially in childhood but through nearly every adult age group (IRR = 1.30, 95% CI = 1.24 to 1.34 for men; IRR = 1.40, 95% CI = 1.31 to 1.49 for women), than did non-Hispanics. Ten years of clinical experience on a Hematology/Oncology unit in a large comprehensive cancer center in North Carolina, led to the first author's curiosity about racial disparities in acute leukemia in her own institution. The first author, a doctoral student in nursing was supported in this research by her faculty mentor, a statistician and a post-doctoral nursing fellow studying healthcare utilization by patients with acute leukemia.

**Methods, Intervention and Analysis:** This retrospective longitudinal study included 121 patients >18 years of age at time of diagnosis with a confirmed diagnosis of AML or ALL who received treatment at the cancer center between 2007-2010. Data was extracted into an excel database and then descriptive statistics were run using SPSS. The post-doctoral nursing fellow assisted the first author with numerical coding decisions. The statistician reviewed all SPSS output. Latinos were younger at diagnosis, more likely to have ALL, less likely to get hematopoietic stem cell transplant.

**Findings and Interpretation:** Latinos were younger at diagnosis, mean age 41 (range 18-81) versus 49 for Blacks/other races (range 19-82) and 50 for Whites (range 18-72) (p=.044). Latinos were more likely to have ALL; n=18 (47% of all acute leukemia cases) for Latinos versus n= 8 (35% of all acute leukemia cases) for Blacks/other races and n= 16 (27% of all acute leukemia cases) for Whites (p=.052). Latinos were less likely than Whites (though slightly more likely than Blacks and those of other races) to undergo hematopoietic stem cell transplantation (HSCT). Whites were more likely to receive HSCT, n=20 (35%), Latinos n=5 (14%) and Blacks/Other races n=2 (9%) (p=.015) which is supported by current literature (Joshua, 2010). Latinos were far more likely than their reference groups to be employed in occupations where exposures were likely n=19 (68%) versus n=11 (22%) for Whites and n=2 (10%) for Blacks/Other Races (p=.000). Other literature also pointed to higher ALL among Latinos than among their reference groups and less HSCT than among their reference groups.

**Discussion and Implications:** More research is needed to understand some of the disparities for Latinos; younger age at diagnosis, more prevalence of ALL and less HSCT as a treatment option. The finding of less HSCT as a treatment option also has implications for training of clinicians. Additional research on occupational exposures is also warranted.

## C2-0071

## EFFECTS OF SLEEP AND MOOD ON COGNITIVE DYSFUNCTION IN KOREAN WOMEN TREATED FOR THYROID

**CANCER.** Mi Sook Jung, PhD, RN, Chungnam National University, Daejeon, South Korea; Heeyoung So, PhD, RN, Chungnam National University, Daejeon, South Korea

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** This study was conducted to identify the influences of sleep and mood on cognitive function in Korean women treated for thyroid cancer. Thyroid cancer is the most common cancer in Korean Women. Considerable efforts have been made to elucidate the association between thyroid dysfunction and cognitive problems, but little is known about the effects of changes in thyroid function on cognition in cancer populations. To date, no studies have examined the prevalence, severity, or contributory factors of cognitive problems in women treated for thyroid cancer. Neurocognitive dysfunction is associated with changes in sleep and mood. Thyroid hormones play a significant role in the regulation of sleep and mood. It is not known if changes in sleep and mood affect cognitive function in women with thyroid cancer. Thus, this study will begin to address this important and understudied area.

**Methods, Intervention and Analysis:** Korean women treated with hormone replacement for either thyroid cancer (n=54) or other thyroid dysfunction (n=40) and age and education-matched healthy controls (n=60) were enrolled. Participants performed neurocognitive tasks and completed self-reports of sleep quality, mood state, and cognitive functioning. Comparative statistics were used to determine group differences. Correlation and multiple regression analyses were performed to address the effects of sleep and mood on cognitive function.

**Findings and Interpretation:** The thyroid cancer group showed significantly greater severity of cognitive dysfunction, sleep, and mood disturbance than controls. No significant differences were found between two patient groups. Sleep and anxiety were correlated with both poorer performance and greater cognitive difficulties across groups. Notably, self-reported sleep and anxiety were important predictors of perceived cognitive function (R2=.43), while the thyroid cancer group, older age, less education, and an interaction of sleep and anxiety significantly predicted poorer cognitive performance (R2=.48).

**Discussion and Implications:** Cognitive dysfunction was evident in Korean women treated for thyroid cancer. Importantly, this study provided evidence for effects of neuropsychiatric symptoms on cognition in cancer. These findings indicate that sleep and mood were key contributors to cognitive dysfunction attributed to thyroid dysfunction. Further studies are needed to examine the pertinent biological factors affecting cognitive dysfunction and to determine appropriate interventions targeting sleep and mood disturbance.

## C2-0080

**DISTRESS EXPERIENCE IN WOMEN WITH NEWLY DIAGNOSED BREAST CANCER.** Anita Nirenberg, DNSc, RN, AOCNP®, Hunter College, New York, NY; Lara Almond, RN, BS, Hunter College, New York, NY; Alex Swistel, MD, Weill-Cornell Medical College, New York, NY

**Underwriting or Funding Source:** Professional Staff Congress: City University of New York

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Introduction: We have observed that patients with solid tumors who have positive biopsies awaiting definitive surgery for staging and grading appear to be anxious and stressed during this time, not knowing the extent of disease or what further treatment regimen will be. Objectives: In order to begin to characterize time course, range and acute consequences of distress and anxiety in women in early phases of breast cancer care we explored, described, examined relationships of distress during the time interval between biopsy-proven diagnosis of breast cancer and definitive surgery.

**Methods, Intervention and Analysis:** Methods: This descriptive pilot study used prospective, repeated measures design to examine changes in self-reported distress and anxiety in women with newly-diagnosed breast cancer awaiting definitive breast cancer surgery. We obtained demographic information and satisfaction with social support. On day of enrollment and at timed intervals within this time frame, the Distress Thermometer (DT) and Hospital Anxiety Depression Scale (HADS) were administered

**Findings and Interpretation:** 19 women were recruited for the study. The mean time between first surgical consult and definitive surgery was 13.0 days (range 2-29 days) except 2 treated with pre-operative chemotherapy waited a mean of 166 days. All except 1 participant were interviewed pre and post-operatively; 13 interviewed 3 times; 4 interviewed 4 times; 2 interviewed twice. Surgeries included lumpectomy =9, mastectomy=5 bilateral mastectomy= 3 (cancer bilateral); prophylactic contralateral breast)= 3 (1 nipple sparing); Immediate reconstruction =5; 2 women had pre-operative chemotherapy; 2 had intra-operative radiation. Relationships of variables relevant to psychological distress between timed responses for each subject, differences by HADS and DT scale cut-off scores and problem categories with each of the dependent variables across time were examined. Comments from participants that inform significant relationships were categorized. Pathology reports from definitive surgery were examined to investigate possible relationships between extent of disease, biomarkers and mitotic indices to investigate instrument score correlations.

**Discussion and Implications:** This study provides preliminary data for a larger study incorporating biologic markers that may influence breast cancer progression. Bio-psychosocial factors may play roles in cancer progression.

## C2-0086

**IDENTIFYING CAREGIVERS AT RISK FOR MOOD DISTURBANCE.** Barbara Daly, PhD, RN, Case Western Reserve University, Cleveland, OH; Sara Douglas, PhD, RN, Case Western Reserve University, Cleveland, OH; Douglas Gunzler, PhD, Case Western Reserve University, Cleveland, OH

**Underwriting or Funding Source:** NINR/NCI R01 0787

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Distress of family caregivers of persons with advanced cancer has been identified as an important target for nursing intervention. While there have been tests of interventions, these have resulted in inconsistent improvement in well-being. This may be related to lack of comprehensive understanding of characteristics that would allow nurses to identify those at high risk. The purpose of this study was to examine predictors and correlates of mood disturbance among family caregivers, accounting for both patient and caregiver characteristics.

**Methods, Intervention and Analysis:** Family caregivers of patients diagnosed with Stage III or IV lung, gastrointestinal, or gynecologic cancer were enrolled and followed for 15 months (or patient death). In addition to demographics, we administered the Profile of Mood States (POMS), Medical Outcomes Social Support (MOSS) scale, and the Caregiver Reaction Assessment (CRA). Data were collected at baseline, 3, 9, and 15 months.

**Findings and Interpretation:** 299 caregivers were enrolled. The majority were either spouse of the patient (65%) or adult child (21%). Fifteen percent were non-Caucasian and average age was 57 years. The highest mood disturbance scores were reported for the fatigue subscale of POMS, followed by the tension

(anxiety) scores. There were no significant changes over time except in the confusion subscale. In contrast, scores on all subscales of the MOSS decreased over time, although the trajectory differed between genders. POMS and MOSS were strongly correlated, indicating the influence of social support on mood disturbance. Patient prognosis had no influence on mood disturbance or social support. Using a mixed effects model, after adjusting for covariates, gender and time since diagnosis were found to be the most influential in social support. Relationships among CRA and POMS subscales were as expected, with the strongest correlation between fatigue and caregiver health problems (r = .499).

**Discussion and Implications:** Results of several of these analyses may contradict assumptions that distress levels decrease over time and that caregivers of the patients with better prognoses experience less mood disturbance. In combination with the finding that social support decreases fairly rapidly over time, these results all point to the importance of on-going, focused assessment of caregivers to identify those at risk.

## C2-0088

## QUALITY OF LIFE OF JORDANIANS POST HEMATOPOIETIC STEM CELL TRANSPLANTATION.

Fawwaz Alaloul, PhD, MPH, MSN, RN, University of Louisville, Louisville, KY; Dorothoy Y. Brockopp, PhD, RN, School of Nursing, University of Kentucky, Lexington, KY; Lynne A. Hall, DrPH, RN, School of Nursing, University of Louisville, Louisville, KY; Taghreed S. Al Nusairat, BSN, RN, King Hussein Cancer Foundation, Amman, Jordan

**Underwriting or Funding Source:** ONS Foundation

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Hematopoietic Stem Cell Transplantation (HSCT) is the treatment of choice for a number of diagnoses of cancer but side effects adversely influence survivors' quality of life. The purpose was to compare the quality of life of Jordanian transplant survivors with healthy controls to assist nurses in Middle Eastern and Western cultures to provide optimal care for these individuals.

**Methods, Intervention and Analysis:** A cross-sectional, comparative study was conducted with 63 survivors and 63 healthy matched controls. Survivors were recruited from the Jordan Bone Marrow Transplantation outpatient clinic and via advertisements in public areas. Data were collected on quality of life and symptom severity using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30. Perceived social support was measured with the Medical Outcomes Study Social Support Survey.

**Findings and Interpretation:** Most survivors reported moderate to high quality of life despite HSCT. Survivors had poorer physical (P<.001) and social functioning (P<.001) compared to health controls. The two groups did not differ on psychological functioning. For the survivors, symptom severity was the strongest predictor of all quality of life domains.

**Discussion and Implications:** Outcomes of this study might be valuable to the health team members in both Arabic and Islamic countries and in the West. Health care members in the West might make use of the results of this study to provide appropriate care for a growing number of Middle-Eastern Muslims living in Western countries who may have cancer or have experienced HSCT. Interventions for individuals of Middle Eastern descent need to focus on the physical and social functioning domains of quality of life. Nurses can incorporate these findings into their plan of care for transplant survivors. Specific interventions for this population should be designed and evaluates.

## C2-0094

## THE ASSOCIATION OF OREXIN A WITH MENOPAUSAL SYMPTOMS IN BREAST CANCER SURVIVORS.

Julie Otte, PhD, RN, Indiana University School of Nursing, Indianapolis, IN; Phillip Johnson, PhD, Indiana University School of Medicine, Indianapolis, IN; Janet Carpenter, PhD, RN, FAAN, Indiana University School of Nursing, Indianapolis, IN; Gail Pyne-Geithman, PhD, University of Cincinnati, Cincinnati, OH; Todd Skaar, PhD, Indiana University School of Medicine, Indianapolis, IN

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Breast cancer survivors (BCS) commonly experience menopausal symptoms of sleep disturbances and hot flashes with few empirically based treatments for these symptoms. Understanding potential shared physiological mechanisms among sleep disturbances and hot flashes is an important step in advancing symptom management strategies by refining existing treatments and/or developing treatments that target multiple symptoms simultaneously, thus, increasing their therapeutic potential. The objective of this study is to to examine the association of the neuropeptide orexin A in relation to sleep disturbances and hot flashes. The purpose is: 1) to determine the association of plasma orexin A concentrations with plasma estrogen concentrations in postmenopausal BCS and 2) to determine if sleep disturbances and hot flashes in postmenopausal BCS are associated with plasma orexin A concentrations. An exploratory aim identified genetic biomarkers associated with plasma orexin A concentrations.

**Methods, Intervention and Analysis:** A secondary analysis of serum and questionnaire data from a multi-site prospective randomized controlled trial was conducted. 18 women with symptoms of sleep disturbances and hot flashes compared to 19 women without symptoms were included in this study. Genotyping of SNPs in the orexin and orexin receptor genes was performed to identify genetic biomarkers. Orexin concentrations will be compared in women with high symptom reporting for both sleep disturbances and hot flashes compared to women without these symptoms. Data analysis is ongoing and will include descriptive and frequency statistics of demographics, subjective sleep, objective hot flashes, orexin and estrogen levels. Pearson correlations, independent t-test, and chi-square will be conducted to compare these outcome variables.

**Findings and Interpretation:** Results from this study will: 1) increase understanding of the estrogenic control of orexin in humans and 2) increase understanding of sleep and hot flash physiology.

**Discussion and Implications:** Our central hypothesis is that the reduced estrogen concentrations in postmenopausal BCS cause a dysregulation of the orexin neuropeptide expression and signaling which results in sleep disturbances and/or hot flashes. The results have a strong potential to lead to new and innovative treatment options for these BCS.

## C2-0099

## HOW VISUAL RHETORIC CREATES KNOWLEDGE OF BREAST CANCER: A RHETORICAL ANALYSIS OF PINK RIBBON IMAGES.

Jennifer Milata, MSN, RN, ACNS-BC, Indiana University, Indianapolis, IN, Uruguay; Janet Carpenter, PhD, RN, FAAN, Indiana University, Indianapolis, IN

**Underwriting or Funding Source:** Grant Number 2T32 NR007066 from the National Institute of Nursing Research

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** In contemporary society, visual images are often used as

a means of persuasion. Society views the images, delivering a message to influence a response. For example, the use of the pink ribbon in the establishment of a brand has been uniquely successful, because no group opposes the breast cancer movement or believes that breast cancer is desirable. The influence of the pink ribbon through visual rhetoric is pervasive. It is important for nurses to understand how images such as this one can shape a woman's experience and knowledge of breast cancer. The purpose was to analyze visual rhetoric of the pink ribbon associated with breast cancer.

**Methods, Intervention and Analysis:** Sonja K. Foss's theory of visual rhetoric was used to analyze how pink ribbon images have been used to influence breast cancer survivors. Foss proposed a 3-step method: (1) identify the function that is communicated in the image; (2) assess how well that function is performed; and (3) scrutinize and evaluate legitimacy of the function.

**Findings and Interpretation:** Functions communicated in the images were multifactorial. All images included the pink ribbon within their logo for breast cancer brand recognition. Although stylistic and substantive elements varied, the function performed by each image was successful in communication of a message that influenced motivation to participate in a breast cancer related cause. In the images reviewed, the use of the pink ribbon lent a legitimacy that may not be congruent with the nature or goals of breast cancer advocacy. The tactics influence the ideology, alter awareness, and create knowledge of breast cancer.

**Discussion and Implications:** The traditional emergence of biomedical knowledge with truth and objectivity means that the profoundly social and constructed nature of such knowledge is overlooked, ignored, or denied. Providers should be aware when treating women affected by breast cancer that they are coming with knowledge about breast cancer that has been constructed through the visual rhetoric inherent in mainstream society. Popular and academic information on breast cancer is pervasive, and both reputable and non-reputable sources of health information are branded with pink ribbons, making them easily recognizable and accessible.

## C2-0103

**MULTIDIMENSIONS OF FATIGUE AND SLEEP IN CHILDREN AND ADOLESCENTS WITH CANCER.** Michelle Nunes, RN, MS, University of São Paulo at Ribeirão Preto College of Nursing and WHO Collaborating Center for Nursing Research Development, University of São Paulo at Ribeirão, Brazil; Eufemia Jacob, PhD, RN, University of California Los Angeles, School of Nursing, Los Angeles, CA; Kathleen Adlard, MN, RN, CPON®, CCNS, CHOC Children's Hospital, Orange, CA; Rita Secola, PhD, RN, CPON®, Children's Hospital of Los Angeles, Los Angeles, CA; Lucila Nascimento, PhD, RN, University of São Paulo at Ribeirão Preto College of Nursing, Brazil

**Underwriting or Funding Source:** Michelle Darezzo Rodrigues Nunes was funded by the Sao Paulo Research Foundation FAPESP (Process number: 2010/20055-6, 2012/00091-3). Funding was received from the Alex Lemonade Stand Foundation and the University of California Los Angeles, Center for Vulnerable Populations Research (National Institute of Nursing Research #P30NR005041)

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Children undergoing cancer treatments experience distressing symptoms such as pain, nausea, vomiting, and fatigue. Fatigue was reported as a prevalent and distressing cancer-related symptom which may have a negative impact on quality of life for patient and their families. While fatigue and sleep experiences for children with cancer were documented during hospitalizations and were associated with treatments, very little information is available about them at home. The study examined 1) fatigue (general, sleep/rest, cognitive), 2) sleep (duration, percent sleep, sleep efficiency, and wake after sleep onset), and 3) factors that affect fatigue and sleep at home.

**Methods, Intervention and Analysis:** After ethical approval, participants (n=35; 19 females; mean 12.6 ± 2.7 years) completed the PedsQL Multidimensional Fatigue Scale (MFS) and wore an actigraph for measurement of sleep at home. Internal consistency reliability and construct validity of MFS was demonstrated in literature. Descriptive statistics were used to summarize total and subscale fatigue scores and to examine the different dimensions of fatigue and sleep. T-tests and Analyses of Variance were used to examine differences in the fatigue and sleep by age, gender, ethnicity and diagnoses.

**Findings and Interpretation:** More than half (54.3%) had total fatigue scores < 75 on 0 to 100 scale, indicating problems with fatigue at home. Adolescents had more problems with fatigue (73.6 ± 16.1), compared to children (79.0 ± 14.2, $p = 0.019$). Females (70.2 ±15.0) also had significantly more problems with fatigue compared to males (83.8 ±12.3, $p < 0.0001$). Sarcoma patients had more problems with fatigue (64.3 ± 8.7), compared to leukemias/lymphomas (78.2 ± 12.8) and other cancer patients (84.6 ± 12.8, $p = 0.001$). Adolescents slept less (312.0 ± 87.5) compared to children (380.0 ± 82.4, $p= 0.02$). Significant correlations were found between sleep/rest fatigue and sleep duration ($r=0.41$, $p = 0.01$). Literature also found more fatigue and sleep problems in adolescents and female.

**Discussion and Implications:** Children and adolescents with cancer have fatigue and sleep problems at home that varied by age, gender, and cancer diagnoses. Our data supports the need for family education related to management of symptoms at home. Future studies are needed to examine interventions that may alleviate fatigue and sleep at home.

## C2-0110

**VALIDATION OF THE PEDSQL MULTIDIMENSIONAL FATIGUE SCALE IN BRAZILIAN CHILDREN WITH CANCER: INITIAL PSYCHOMETRIC PROPERTIES.** Michelle Nunes, RN, MS, University of São Paulo at Ribeirão Preto College of Nursing and WHO Collaborating Center for Nursing Research Development, University of São Paulo at Ribeirão, Brazil; Regina Lima, RN, PhD, University of São Paulo at Ribeirão Preto College of Nursing, Brazil; Emiliana Bomfim, RN, MS student, University of São Paulo at Ribeirão Preto College of Nursing, Brazil; Milena Floria-Santos, RN, PhD, University of São Paulo at Ribeirão Preto College of Nursing, Brazil; Claudia Santos, PhD, University of São Paulo at Ribeirão Preto College of Nursing, Brazil; Lucila Nascimento, RN, PhD, University of São Paulo at Ribeirão Preto College of Nursing, Brazil

**Underwriting or Funding Source:** Michelle Darezzo Rodrigues Nunes was funded by the Sao Paulo Research Foundation's FAPESP (Process number: 2010/20055-6)

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Fatigue is a highly prevalent symptom in cancer patients during different phases of treatment. In Brazil, measurements, assessments and interventions involving fatigue are not available and this symptom has been underreported by professionals because there are no valid and reliable instruments for evaluation in the local language. The purpose of the study is to examine the initial psychometric properties of the PedsQL Multidimensional Fatigue Scale for Brazilian Portuguese, using the child self-report and parent proxy-report versions.

**Methods, Intervention and Analysis:** This cross-sectional study has been carried out at the pediatric oncology unit of a university hospital in the state of Sao Paulo, southeast Brazil. The study sample consisted of 79 families of children and adolescents, aged five to 18 years, diagnosed with cancer. After permission of the authors of the scale and ethical approval, young children (n=17; 5 to 7 years), children (n=30; 8 to 12 years) and adolescents (n=31; 13 to 18 years) with cancer and their caregivers (n=79), filled out the PedsQL Multidimensional Fatigue Scale during hospitalization or outpatient appointments.

**Findings and Interpretation:** Children and adolescents (51.9% male; 40.5% leukemia; 11.4% recurring neoplasms) were undergoing chemotherapy alone or in combination with radiotherapy and/or chemotherapy. The caregivers (mean age of 39,5 ±9.8 years) were mostly mothers (82.3%), married (64.6%), with unfinished primary education (43%) and from low socioeconomic family (46.8%). All participants (children, adolescents, caregivers) reported that the instrument was easy to use (84.8%), or very easy to answer (82.3%). Average completion time was 5 minutes for both versions. Mean total fatigue score for patients was 66.8 ±18 and caregivers was 66.8 ± 17.2. Patient general fatigue (73.3) and parents (66.2); patient sleep rest fatigue (60.4) and parents (63.3) and patient mental fatigue (66.4) and parents (71.5) were highly correlated. Cronbach's alpha for all domains, for the young children, children and adolescents and the caregivers, ranged between 0.77 and 0.90, except for the children's sleep-related fatigue domain (0.52).

**Discussion and Implications:** The results demonstrate good reliability of the instrument for the preliminary psychometric property analysis.

## C2-0113

## BODY IMAGE, SOCIAL ANXIETY, AND VIRAL-RELATED TUMORS IN PATIENTS WITH HEAD AND NECK CANCER.

Bethany Rhoten, PhD, RN, Vanderbilt University School of Nursing, Nashville, TN; Sheila Ridner, PhD, RN, Vanderbilt University School of Nursing, Nashville, TN; Mary Dietrich, PhD, Vanderbilt University School of Nursing, Nashville, TN

**Underwriting or Funding Source:** National Institutes of Health, American Cancer Society

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Head and neck cancer (HNC) has traditionally affected older individuals with a history of heavy tobacco and/or alcohol use. The incidence of HNC, however, is increasing in younger individuals as well as those without traditional risk factors. Viral-related HNC tumors from Human Papillomavirus (HPV) and Epstein Barr Virus (EBV) are increasing. The purpose of this study was to examine body image, social anxiety, and the incidence of HPV and EBV related tumors in a sample of patients with HNC.

**Methods, Intervention and Analysis:** Fifty participants with HNC were assessed before and after completing treatment. Demographic information was collected via self-report. Body image was examined using the Body Image Quality of Life Inventory (BIQLI), and social anxiety was assessed using the Liebowitz Social Anxiety Scale (LSAS). Additionally, tumor DNA characteristics were extracted from the electronic medical record. SPSS was used to analyze the data, and descriptive statistics were used to summarize the study findings.

**Findings and Interpretation:** Participants were predominantly male (74%, n=37), Caucasian (90%, n=45), and married (74%, n=37). The average age of participants was 57.3 years. Forty-four percent (n=22) of participants had either HPV or EBV-related HNC tumors. Participants with viral-related tumors (n=22) ranged in age from 31-75 years, while other participants (n=28) ranged in age from 40-78 years. The majority of male participants had a history of tobacco (59.5%, n=22) and alcohol use (75.7%, n=28), while the majority of female participants had no history of tobacco (46.2%, n=6) or alcohol use (7.7%, n=1). The positive effect of body image on quality of life decreased from baseline to the end of treatment for participants with viral-related tumors as well as non-viral related tumors. Social anxiety increased from baseline to the end of treatment for participants, regardless of tumor DNA type.

**Discussion and Implications:** The increasing number of younger patients with HPV and EBV related HNC presents unique supportive care challenges for oncology nurses and healthcare professionals. Timely assessment of body image and patient education is an important part of holistic care for this patient population.

## C2-0115

## THE EFFECT OF PATIENT EDUCATION ON REPORTED BONE PAIN IN PATIENTS WITH BREAST CANCER RECEIVING CHEMOTHERAPY AND PEGFILGRASTIM: A RANDOMIZED, SINGLE-BLIND STUDY (VINE) AMGEN 20110148; NCT 01752907.

Linda Vanni, RN, MSN, ACNS-BC, NP, Providence Hospital, Southfield, MI; Cathy Maxwell, RN, OCN®, Advanced Medical Specialties, Miami, FL; Andrew Guinigundo, RN, MSN, ANP-BC, CNP, Medical Hematology and Oncology, Oncology Hematology Care Inc., Cincinnati, OH; Sejal Badre, MS, Global Biostatistical Sciences, Amgen Inc., Thousand Oaks, CA; Holly Watson, RN, MS, ANP-BC, Global Development, Amgen Inc., Thousand Oaks, CA

**Underwriting or Funding Source:** Amgen sponsored clinical trial. Andy Guinigundo, Cathy Maxwell and Linda Vanni received reimbursement and travel expenses for their work as consultants on the development of this study. Cathy Maxwell has received honoraria and travel for her work on advisory boards for Amgen and speakers bureau for Amgen, Abraxis, Bayer, Celgene, Eisai, Merck, Novartis, Pfizer, and Spectrum. Andy Guinigundo has received honoraria and travel expenses for his work on the speakers bureau for Amgen, Celgene, and Pfizer and for advisory board for Eisai. Holly Watson and Sejal Badre are employees and stockholders in Amgen, Inc.

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Patient education is a primary function of oncology nursing and its importance to patient outcomes has been documented; however, it has not been specifically studied in the modulation of pegfilgrastim-related bone pain. The study team collaborated with oncology nurses to design and develop this blinded study where patients receiving chemotherapy and pegfilgrastim are randomized to receive one of two educational DVDs. The effects of these DVDs on patient reported bone pain will be estimated. The primary endpoint is to estimate the difference between arms of mean maximum patient-reported bone pain in cycle 1. The secondary endpoints are to evaluate patient-reported bone pain, area under the curve (AUC) for bone pain, analgesic use, and bone pain captured as part of adverse event (AE) reporting across cycles.

**Methods, Intervention and Analysis:** Three hundred patients will be enrolled. Female patients with newly diagnosed, chemotherapy-naive, stage I-III breast cancer, able to understand English, and planning four cycles of neoadjuvant or adjuvant chemotherapy with pegfilgrastim are eligible. Exclusions include ongoing chronic pain or chronic pain treatment. Patients are randomized 1:1 to receive one of two nurse-developed and recorded educational DVDs to watch twice at the clinic on two separate days, up to and including the first visit for pegfilgrastim administration. One DVD will give a general overview of the side effects of chemotherapy, while the other DVD will discuss

specific information about bone pain following chemotherapy and pegfilgrastim. Bone pain data are collected using patient-reported surveys and as part of standard AE reporting. The clinical hypothesis is that a difference in mean maximum pain of 0.5 (scale 0-10) in favor of bone pain education is clinically relevant.

**Findings and Interpretation:** This study is in progress. Results are expected at the end of 2014.

**Discussion and Implications:** VINE is expected to provide clinically important information regarding the impact of patient education on bone pain in patients receiving chemotherapy and pegfilgrastim. Oncology nurses will be able to include this information in formulating effective teaching tools and evidence-based patient care.

## C2-0119

## ASSESSMENT OF FATIGUE AND FATIGUE MANAGEMENT IN WOMEN WITH OVARIAN CANCER.

Yun Jiang, RN, BSN, MS, University of Pittsburgh, Pittsburgh, PA; Heidi Donovan, PhD, RN, University of Pittsburgh, Pittsburgh, PA

**Underwriting or Funding Source:** NINR T32 NR07102; F31 NR07556; Oncology Nursing Society/Ortho-Biotech; PEO Scholar Award

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Fatigue is one of the most prevalent and distressing symptoms experienced by cancer patients. Patients' efforts to cope with fatigue have not been clearly documented. The purpose of this study was to 1) describe the use of different types of coping strategies among women with ovarian cancer experiencing fatigue, and; 2) explore factors associated with use of different strategies.

**Methods, Intervention and Analysis:** This secondary analysis included data from 282 ovarian cancer survivors who reported fatigue as one of their top 3 most-noticed symptoms in a cross-sectional mailed survey study. The survey included reliable and valid measures of personal factors (sociodemographics, trait anxiety), disease/treatment status, fatigue, and fatigue-related coping strategies. Descriptive statistics, bivariate correlations, and logistic regressions were used for data analysis.

**Findings and Interpretation:** Women with ovarian cancer had mean age of 54.3 ±11.9 years; a majority were married/lived with partner (70.1%); white (n=272); had attended some college (56.8%); and worked full/part-time (44.9%). Mean fatigue severity in the past week was 5.5 ±2.6 (0-10 scale) and was significantly ($p<.01$) associated with number of previous chemotherapy regimens ($r=.28$); months since last chemotherapy ($r=-.31$); self-reported health ($r=-.56$); and anxiety ($r=.32$). Fatigue-related coping efforts: 61.5% (n=163) had not discussed fatigue with a HCP in the past month and had not received recommendations about fatigue management (n=188, 66.7%). Most women reported active strategies to manage fatigue (71.2%, n=185), using relaxation (78.2%, n=204), or diverting attention away from fatigue (62.6%, n=161). Fewer women sought emotional support from others (49.2%, n=129), spiritual comfort and support (46.0%; n=120), or expressed emotions to reduce tension, anxiety, frustration (34%; n=85). Factors associated with coping differed across strategies. However, in general, emotion-focused coping was associated with perceptions of fatigue as severe, distressing or interfering, while active coping was associated with perceptions of fatigue controllability. These associations remained when controlling for personal and disease/treatment factors.

**Discussion and Implications:** Despite bothersome fatigue, most women had not recently discussed it with HCPs and had not received fatigue management recommendations. Women did use a wide range of self-care strategies to either manage their fatigue or reduce the impact of fatigue. These findings may help nurses to provide better self-care suggestions for coping with fatigue.

## C2-0122

## IMPLEMENTATION OF AN EVIDENCE-BASED PROGRAM OF CARE FOR PEOPLE WITH CANCER AND THEIR FAMILY CAREGIVERS IN A COMMUNITY SETTING.

Hyojin Yoon, RN, MSN, University of Michigan, Ann Arbor, MI; Bonnie Dockham, LMSW, Cancer Support Community, Ann Arbor, MI; Ann Schafenacker, RN, MSN, University of Michigan, Ann Arbor, MI; Laurel Northouse, PhD, RN, University of Michigan, Ann Arbor, MI

**Underwriting or Funding Source:** Rosalynn Carter Institute for Caregiving

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Psycho-educational interventions that have been tested in randomized clinical trials (RCTs) to help patients and their family caregivers cope with cancer are seldom implemented in practice settings. Better collaboration is needed between academic nurse researchers and direct providers to implement evidence-based interventions in the community. The FOCUS Program is an efficacious psycho-educational program that was tested in three prior RCTs. To make the program available in the community, nurse researchers and social workers collaborated to implement a pilot study in a Cancer Support Community (CSC) in Michigan. The purpose of the study was to adapt and implement the evidence-based program in the community setting and determine the effects of the FOCUS Program on patients' and caregivers' quality of life (QOL) (primary outcome), perceived benefits of illness, dyadic support, communication, and self-efficacy (secondary outcomes).

**Methods, Intervention and Analysis:** A pre-post design (no control) was used to implement the program in a group format, consisting of 6 weekly, 2-hour sessions. The program was delivered by oncology social workers using a checklist protocol to maintain intervention fidelity. Eighty-six patient-caregiver dyads were referred to the study, 37 dyads enrolled (64%), and 34 dyads were retained (94%). The sample consisted primarily of patients with breast, gynecological, and lung cancer and their caregivers who were primarily spouse/partners. Patients and caregivers completed instruments separately pre-intervention (Time1) and immediately post-intervention (Time2). Instruments with established reliability and validity were administered: QOL (FACT-G), benefits of illness (Benefit of Illness Scale), dyadic support (Social Support Scale), communication (Lewis MIS Scale), and self-efficacy (Lewis CASE). Data were analyzed using descriptive statistics and Repeated Measures ANOVA with dyadic scores.

**Findings and Interpretation:** Significant changes (all ps<.05) from pre- to post-intervention were found for dyads emotional, functional, and total QOL (primary outcome), and self-efficacy (secondary outcome).

**Discussion and Implications:** Although the study was limited by the lack of a control group and a small sample, results suggest that the program can be implemented in the community to provide psychosocial care to cancer patients and caregivers with positive outcomes. A future implementation study will use a wait-list control group and multiple CSC sites to increase sample size.

## C2-0131

## FACTORS ASSOCIATED WITH SYMPTOM RELATED EMERGENCY DEPARTMENT VISITS AND HOSPITAL ADMISSIONS DURING AMBULATORY CANCER TREATMENT.

Mary Lou Siefert, DNSc, RN, AOCN®, Dana-Farber Cancer Institute, Boston, MA; Traci Blonquist, MS, Dana-Farber Cancer Institute, Boston, MA; Fangxin Hong, PhD, Dana-Farber Cancer Institute, Boston, MA; Donna L. Berry,

PhD, RN, AOCN®, FAAN, Dana-Farber Cancer Institute, Boston, MA

**Underwriting or Funding Source:** NINR (R01 NR008726)
**Poster Category:** Research Study
**Topic Significance and Study Purpose/Background/Rationale:** Distress associated with cancer symptoms or treatment side effects has a negative impact on quality of life (QOL). Managing symptoms and QOL issues are high priorities for oncology clinicians. Furthermore, attending to symptoms and side effects can promote safe effective delivery of cancer therapies and may prevent or reduce unplanned emergency department visits (EDV) and hospital admissions (HA). Purpose: To examine predictors of symptom related EDVs and HAs (sx-EDV/HAs).
**Methods, Intervention and Analysis:** A secondary analysis was conducted from a study designed to compare symptoms and quality of life (SxQOL) with use of an enhanced web-based, electronic self-report assessment and educational support program for cancer (ESRA-C II). Participants were randomized to SxQOL screening at four time points (control) versus screening, targeted education, communication coaching and the opportunity to track/graph SxQOL over time (intervention). Descriptive statistics and a t-test (unequal variance) were used to assess group differences in sx-EDV/HAs. The odds of sx-EDV/HAs were analyzed using logistic regression, including work status, education level, study group, minority status, age, gender, financial difficulties, months on study, age-adjusted co-morbidity score, stage, symptom distress, emotional function, depression and treatment type (radiation, chemotherapy, or both).
**Findings and Interpretation:** In a sample of 663 patients, 171 of 203 EDV/HAs were symptom related. 49 of 327 control patients had 96 events, and 49 of 336 intervention patients had 75 events. There was no significant difference in the mean number of unplanned events (p=0.28). Although not statistically significant, there were fewer sx-EDV/HAs in the intervention group (1 in 5) versus the control group (1 in 4). In multivariable logistic regression, the odds of sx-EDV/HAs were associated with receiving chemotherapy, not working, lower education level, and higher on therapy symptom distress scores.
**Discussion and Implications:** A majority of patients did not have a sx-EDV/HA, and there was a trend in the intervention group toward fewer sx-EDV/HAs. Pertinent sociodemographic and clinical factors were associated with the odds of a sx-EDV/HA, suggesting that future work needs to address the risk of unplanned events and focus on reducing symptom distress. Prospective studies are needed to implement and further evaluate effects of targeted symptom management interventions in high utilization risk groups.

## C2-0134

## IMAGE OF GOD, RELIGION, SPIRITUALITY, AND LIFE CHANGES IN BREAST CANCER SURVIVORS: A QUALITATIVE APPROACH.

Judy Schreiber, PhD, RN, University of Louisville, Louisville, KY; Jean Edward, PhD, RN, University of Massachusetts, Amherst, MA

**Underwriting or Funding Source:** American Cancer Society Doctoral Scholarship in Cancer Nursing Grant (DSCN 05-186-01), Pre-doctoral Fellow Kentucky Cancer Prevention Training Grant (Grant# - 5 R25 CA098220 04) from the National Cancer Institute, and Beta Epsilon Chapter, Sigma Theta Tau
**Poster Category:** Research Study
**Topic Significance and Study Purpose/Background/Rationale:** Religion and spirituality are coping mechanisms frequently used by breast cancer survivors. How religion and spirituality relate to changes in behaviors, relationships, and goals is unclear. This study explored the impact of a breast cancer diagnosis on religion/faith and changes in behaviors, relationship, or goals. There is evidence to suggest that a HE or LE view of God is associated with differences in psychological outcomes.
**Methods, Intervention and Analysis:** Qualitative review of short, descriptive written responses to open-ended questions regarding breast cancer survivors' perception of the role of religion/faith in their lives, the impact of their diagnosis on their image of God and on faith/religious beliefs, and any changes in behaviors, relationships, or life goals were examined. Previously reported data suggested that a higher (HE) or lesser (LE) engaged view of God was associated with differences in psychological outcomes. Based on this finding, qualitative descriptive content analysis was used to derive themes for responses in 28 women [14 HE; 14 LE].
**Findings and Interpretation:** Two overarching themes emerged: religion/faith/God related to the cancer diagnosis and changes resulting from the diagnosis. Subthemes were identified and differed based on a HE or LE image of God. Many studies examining religion/spirituality (R/S) measure attitudes and behaviors. MacDonald and Friedman (2002) note that most measures of R/S measure behaviors and secondary gains, not the underlying source or core beliefs. The individual's worldview in relation to the presence/absence of God and their perception of how God interacts with them and the world is a measure of the underlying source or core belief. The Relational Model of Image of God in Cancer Survivorship was developed based on the findings.
**Discussion and Implications:** Awareness of life and its fleeting nature was common to all. Behaviors varied from a focus on self-improvement - a sense of egocentrism [LE], to a focus on using their cancer experience to help others' a sense of altruism [HE]. Study results suggest that seemingly small, but highly meaningful, differences based on one's image of God [worldview] result in considerably different attitudinal and behavioral outcomes. Understanding these differences can allow the nurse to offer tailored resources/support that are coherent with the individual's worldview.

## C2-0136

## RISK FACTORS OF IMRT INDUCED FATIGUE IN HEAD AND NECK CANCER PATIENTS.

Canhua Xiao, PhD, RN, Emory University, Atlanta, GA; Jonathan Beitler, MD, Emory University, Atlanta, GA; Luke Yeeloo Ong, undergraduate, Emory University, Atlanta, GA; Andrew Miller, MD, Emory University, Atlanta, GA; Deborah Bruner, PhD, RN, FAAN, Emory University, Atlanta, GA

**Poster Category:** Research Study
**Topic Significance and Study Purpose/Background/Rationale:** Fatigue, one of the most common symptoms in cancer patients, profoundly decreases patients' quality of life and treatment adherence, and increases health care cost and utilization. Patients with head and neck cancer (HNC) receiving radiotherapy have particularly high rates of fatigue. Recent research has shown that HNC patients receiving Intensity-Modulated Radiation Therapy (IMRT), a commonly used new radiotherapy targeting tumors with higher doses while avoiding normal structures, experience even higher fatigue compared to conventional RT. The purpose of this study was to examine risk factors for IMRT-induced fatigue.
**Methods, Intervention and Analysis:** Fatigue, one of the most common symptoms in cancer patients, profoundly decreases patients' quality of life and treatment adherence, and increases health care cost and utilization. Patients with head and neck cancer (HNC) receiving radiotherapy have particularly high rates of fatigue. Recent research has shown that HNC patients receiving Intensity-Modulated Radiation Therapy (IMRT), a commonly used new radiotherapy targeting tumors with higher doses while avoiding normal structures, experience even higher fatigue compared to conventional RT. The purpose of this study was to examine risk factors for IMRT-induced fatigue.

**Findings and Interpretation:** Univariate analysis revealed that race, treatment and cancer site significantly correlated with fatigue. On multivariate analysis, cancer site significantly correlated with fatigue after controlling other symptoms (F=30.747, p=0.000). Patients with non-larynx cancer, including sites of oral cavity, paranasal sinus, oropharynx and hypopharynx, had significantly more severe fatigue than those with larynx cancer (t=2.284, p=0.027).

**Discussion and Implications:** Previous studies showed that dose distributions to brainstem and cerebellum may contribute to fatigue post-IMRT for oropharynx and hypopharynx cancer. Given the fact that larynx is at the lowest part of the head and neck region, it is possible that our finding about cancer sites might be related to IMRT doses to adjacent areas of the brain. Future larger studies involving radiation dose-volume are needed to verify the finding and explore the underlying mechanism for the association in this population, which will benefit prevention and management of this distressing symptom.

## C2-0137

## SLEEP, MOOD AND HOME SYMPTOM MANAGEMENT IN CANCER PATIENT-CAREGIVER DYADS.

Patricia Carter, PhD, RN, CNS, The University of Texas at Austin, Austin, TX; Sabrina Mikan, PhD, RN, CNS, Texas Oncology, Austin, TX; Debra Patt, MD, Texas Oncology, Austin, TX

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** 41.4% of cancer patients and 50% of caregivers experience chronic sleep deprivation. Caregivers often have little to no medical training, yet they may provide symptom management in the home. No studies to date, have explored the relationships between caregiver sleep deprivation and patient symptom management in the home. This study addresses a literature gap by describing the relationships between Caregiver-patient dyad sleep and mood characteristics and symptom management at home. The worry of providing complex care at home can result in caregiver sleep deprivation. Sleep deprivation impairs cognitive processing critical to recognizing and responding to symptoms. As many as 50% of patients delay or refuse cancer treatments due to poor symptom management. We asked, what are the levels of sleep quality, depressive symptoms and perceived stress in cancer patients and their caregivers? And what are the relationships between caregiver confidence with symptom management and caregiver sleep quality?

**Methods, Intervention and Analysis:** A cross-sectional descriptive design is used. Participants are adult, English speaking cancer patient-caregiver dyads recruited at a large community cancer center in Texas. Following consent, participants completed sleep (PSQI and ISI), mood (PSS and CESD), quality of life [patients] (FACT-G), and confidence in symptom management [caregivers] (investigator developed) questions. Non-parametric measures are used to describe participant characteristics. Correlations are used to describe relationships between sleep, mood, and symptom management confidence.

**Findings and Interpretation:** To date, 19 dyads have completed all items. Caregiver and patient mean ages are 61.2 and 58. Participants are primarily Caucasian (74%) and college educated (16.4 years). Sleep are moderately disturbed in both caregivers and patients (PSQI mean = 9.0 and 7.8; ISI mean =8.7 and 5.9). Mood is similarly disturbed (CESD mean = 14.2 and13.8; PSS mean = 22.8 and22.9). Caregiver confidence and sleep quality are negatively correlated. Sleep and mood are significantly correlated (e.g. CESD and PSQI r=.566; p.000).

**Discussion and Implications:** Preliminary findings suggest sleep and mood disturbances in both caregivers and patients. These disturbances are interrelated and caregivers' sleep may influence their confidence in managing symptoms at home. Further research is needed to determine if improved sleep quality can improve patient experiences and caregiver confidence.

## C2-0141

## DOES BASELINE ANXIETY/DEPRESSION INFLUENCE OUTCOMES OF A BEHAVIORAL SLEEP THERAPY RCT?

Ann Berger, PhD, APRN, AOCNS®, FAAN, University of Nebraska Medical Center, Omaha, NE; Melody Hertzog, PhD, University of Nebraska, Lincoln, NE; Brett Kuhn, PhD, BSM, University of Nebraska, Omaha, NE

**Underwriting or Funding Source:** NIH 5R01NR007762

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** At least 1/3 of breast cancer survivors report persistent symptoms to oncology nurses. Two common symptoms nurses assess after chemotherapy (CTX) are sleep disturbances and cancer-related fatigue (CRF). Nurses suspect that anxiety/depression interferes with the effectiveness of interventions to decrease these symptoms. The purpose of this secondary analysis was to explore the influence of baseline anxiety/depression on the effectiveness of a behavioral therapy (BT) sleep intervention compared to a healthy eating control group (HE) on sleep disturbances, CRF, and 24-hour circadian activity rhythms (CAR) 30 days after the last CTX and 1 year after the first CTX.

**Methods, Intervention and Analysis:** Subjects randomized to the BT group (n=91) or HE group (n=84) were women (mean age=51) who were post-operative, Stage I/II/IIIA breast cancer, receiving 4-8 adjuvant CTX treatments with study intervention prior to each CTX and 30, 60, 90 days after the last CTX. Data were collected using the Hospital Anxiety/Depression Scale (<8=high), Piper Fatigue Scale, Pittsburgh Sleep Quality Index (PSQI), and wrist actigraphy (collected 7 days each time). Analysis included descriptive statistics and ANCOVA. If p<.20 for the interaction of intervention group with baseline anxiety or depression, investigation using graphical methods was conducted.

**Findings and Interpretation:** At baseline, 37% had anxiety scores of <8 and 8.1% had depression scores of <8. At 30 days, in those with lower baseline anxiety or depression, the BT group had more robust CAR (mesor, amplitude, acrophase) than the HE group. However, in those with high baseline anxiety or depression, the order was reversed. This pattern was observed at 1 year for mesor only. At 1 year, groups didn't differ on the PSQI for those with low baseline anxiety, but those in the HE group with high anxiety had poorer sleep (PSQI); depression showed the same pattern. No differential effects were found for fatigue scores at either time.

**Discussion and Implications:** Overall, participants with high levels of anxiety or depression benefitted less from the BT intervention and those randomized to the HE group had the poorest outcomes. Clinical and research teams need strategies to identify and treat anxiety/depression comorbid with sleep disturbances and CRF.

## C2-0149

## THE EXPERIENCE OF COGNITIVE CHANGE IN WOMEN WITH BREAST CANCER FOLLOWING CHEMOTHERAPY.

Mary Louise Kanaskie, PhD, RN, AOCN®, Penn State Hershey Medical Center, Hershey, PA

**Underwriting or Funding Source:** Nursing Foundation of Pennsylvania

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Change in cognitive function is a side effect of chemotherapy

that has been reported in 16 to 50 percent of women receiving chemotherapy for breast cancer. These symptoms include subtle changes in memory, concentration, and some higher order processes that include psychomotor speed and executive functioning. Research is limited that has explored the lived experience of the phenomenon of chemotherapy-related cognitive change in breast cancer survivors. Research focused on revealing the impact of cognitive change following chemotherapy and how women cope with these changes is needed to direct meaningful and timely interventions to improve quality of life for cancer survivors. The purpose of this study was to uncover the meaning of cognitive change in women with breast cancer, how symptoms are experienced and become evident, how it impacts roles in personal and professional lives, and how women cope with these changes. Nurses and other healthcare professionals are in a unique position to assess individuals for this treatment side effect and to offer appropriate interventions.

**Methods, Intervention and Analysis:** An interpretive phenomenological study was conducted with seven women with breast cancer, between the ages of 42-59, who had completed standard chemotherapy treatment within the past 12 months. Each woman participated in two in-depth semi-structured interviews one month apart and maintained a written journal. Reflective journaling and total immersion in the data enhanced the rigor of the methodology. In addition, a panel of three faculty members, with expertise in qualitative analysis, reviewed interview transcripts and provided insights which led to the refinement of essential themes and subthemes.

**Findings and Interpretation:** Phenomenological analysis employing van Manen's framework for interpretive phenomenology revealed five major essential themes: Noticing the difference, experiencing cognitive changes, interacting socially, coping, and looking forward. Subthemes, both essential and incidental, were identified within each major theme. Analysis provided a description of the phenomenon in relation to the lifeworld existentials of lived space, lived body, lived time, and lived human relation.

**Discussion and Implications:** The experience of cognitive change could not be isolated nor studied separately from the greater context of the women's reality of having breast cancer. This study provides clarity related to the impact of cognitive change and how women cope with these changes in relation to their daily roles and responsibilities. New knowledge is provided that is related to the impact on employment and professional life that can impact financial and social well being of women who are breast cancer survivors living with chemotherapy related cognitive changes.

## C2-0152

## TUMOR-INDUCED CARDIOMYOPATHY IN A MOUSE MODEL OF CANCER-RELATED FATIGUE.

Donna McCarthy Beckett, PhD, RN, FAAN, Marquette University, Milwaukee, WI; Sarah Stephens, PhD, Ohio State University, Columbus, OH; Yvonne Clark, PhD, RN, Ohio State University, Columbus, OH; Runfeng Jing, MS, Ohio State University, Columbus, OH; Loren Wold, PhD, FAHA, FAPS, Ohio State University, Columbus, OH

**Underwriting or Funding Source:** NINR/NIH R01 NR012618

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Fatigue plagues over 50% of cancer patients after completion of therapy, significantly reducing quality of life and functional status. Skeletal muscle wasting, associated with elevated production of interleukin-6, is thought to contribute to cancer-related fatigue (CRF). Significant fatigue is also experienced by patients with heart failure (HF), which is also associated with elevated plasma levels of IL-6. Drugs inhibiting activity of the renin-angiotensin-aldosterone system are used to treat HF and to reduce chemotherapy-induced cardiomyopathy in cancer patients. The purpose of the present study was to determine if cardiomyopathy contributes to CRF independent of chemotherapy, and if Losartan, an angiotensin II receptor blocker, would reduce symptoms of fatigue in tumor-bearing (TB) mice.

**Methods, Intervention and Analysis:** Female mice were implanted with colon26 tumor cells. One half the TB and control mice received losartan in their drinking water for 21 days. Fatigue was measured as wheel running activity (WRA) and grip strength on days 10 and 18 of tumor growth. Mice underwent echocardiography on day 19 prior to sacrifice. Serum levels of IL-6 were measured by ELISA, and muscle expression of IL-6 mRNA was measured in heart and gastrOCN®emius tissue by real-time PCR. Data were analyzed using two way (tumor, drug) and repeated measures ANOVA.

**Findings and Interpretation:** Serum IL-6 and muscle expression of IL-6 mRNA were increased in TB mice. WRA and GS declined in the tumor bearing mice, as did gastrOCN®emius muscle mass and echocardiographic measures of systolic heart function. Losartan treatment of TB mice preserved gastrOCN®emius mass, improved systolic heart function, and reduced heart expression of IL-6 mRNA. However, losartan had no effect on serum IL-6, WRA or GS of the TB mice. These data confirm that tumor-growth has a direct effect on systolic heart function. Losartan treatment reduced IL-6 expression in the heart of TB mice and improved systolic heart function as well as gastrOCN®emius muscle mass, but had no effect on fatigue.

**Discussion and Implications:** We conclude that skeletal muscle wasting is not a major driver of fatigue behaviors in this mouse model of CRF. However, patients with CRF should be assessed for symptoms of impaired systolic heart function.

## C2-0156

## RESEARCH ON GENETICS AND IMMUNOLOGICS MECHANISMS OF CANCER RELATED FATIGUE: NURSING CONTRIBUTIONS.

Michelle Nunes, RN, MS, University of São Paulo at Ribeirão Preto College of Nursing and WHO Collaborating Center for Nursing Research Development, Brazil; Emiliana Bomfim, RN, MS student, University of São Paulo at Ribeirão Preto College of Nursing, Brazil; Lucila Nascimento, RN, PhD, University of São Paulo at Ribeirão Preto College of Nursing, Brazil; Regina Lima, RN, PhD, University of São Paulo at Ribeirão Preto College of Nursing, Brazil; Ester Rocha, RN, University of São Paulo at Ribeirão Preto College of Nursing, Brazil; Milena Floria-Santos, RN, PhD, University of São Paulo at Ribeirão Preto College of Nursing, Brazil

**Underwriting or Funding Source:** Emiliana Bomfim was funded by the São Paulo Research Foundation FAPESP (Process number: 2011/17006-6).

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Fatigue is the most prevalent symptom in cancer patients, occurring in 75% to 95% of cases. The development of interventions for fatigue depends on a more specific definition of this construct and a better understanding of biological processes that contribute to its development and persistence. Several studies have explored the possibility of involvement of cytokines concentration, and its genetics polymorphisms as biologic markers of cancer-related fatigue (CRF). This study aimed to search available evidences on the literature produced by nurses, regarding genetics and immunologic mechanisms of CRF.

**Methods, Intervention and Analysis:** An integrative review was conducted using PubMed, Web of Science, CINAHL and LILACS, between 2002 and 2012, using the key words: cytokines,

genetics, gene, polymorphisms, fatigue, nursing, biomarkers, and cancer. Inclusion criteria were studies conducted by nurses; articles focused on CRF and circulant biomarkers; articles that examined genetic predispositions to CRF; publications in English, Spanish and Portuguese with publications and abstracts available online on that databases.

**Findings and Interpretation:** We found 1229 articles with the above keywords. After abstracts exhaustive reading, independently by three authors, accordance with inclusion criteria, 6 of those articles were selected. After those publication analysis, two main themes were observed: biomarkers associated with quality of life in patients with cancer; evidence of association between polymorphisms and cytokines with CRF. Most of articles appointed the term "sickness behavior" to define the syndrome resulting from the release of pro-inflammatory cytokines as part of the immune response to cancer. With the exception of a clinical trial, all manuscripts pointed to genotypic differences related to different levels of fatigue.

**Discussion and Implications:** The findings indicated a lack of consensus among researchers about the exact set of cytokines and polymorphisms associated with CRF. It was emphasized the need for further investigations given the gaps that still existing on the matter. Once identified the actual pathophysiological pathways of CRF, the measurement of biological markers may be implemented on clinical practice as part of the individualized nursing assistance, and genomic based healthcare. The understanding of biological issues as determinants of subjective experiences such as FRC improve interventions to prevent and resolve this symptom.

## C2-0158

## OCCURRENCE OF COMMON SYMPTOMS CAN BE USED TO CATEGORIZE ONCOLOGY PATIENTS WITH DISTINCT SYMPTOM EXPERIENCES.

Christine Miaskowski, RN, PhD, University of California, San Francisco, CA; Janine Cataldo, RN, PhD, University of California, San Francisco, CA; Bruce Cooper, PhD, University of California, San Francisco, CA; Steven Paul, PhD, University of California, San Francisco, CA; Bradley Aouizerat, PhD, MAS, University of California, San Francisco, CA

**Underwriting or Funding Source:** National Cancer Institute
**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** The purposes of this study were to determine if the occurrence of 13 common symptoms could be used to categorize oncology patients with distinct symptom experience and if these distinct classes differed on demographic and clinical characteristics and quality of life (QOL) outcomes.

**Methods, Intervention and Analysis:** A total of 582 oncology outpatients completed the Memorial Symptom Assessment Scale and the Multidimensional Quality of Life Scale. Latent class analysis was used to identify distinct subgroups of oncology patients based on their rating of the occurrence of 13 common symptoms. Differences among the latent classes were evaluated using analyses of variance and Chi Square analyses.

**Findings and Interpretation:** Four distinct subgroups of patients were identified: all low (28.0%), moderate level of physical symptoms and low level of psychological symptoms (26.3%), moderate level of physical symptoms and high level of psychological symptoms (25.4%), and all high (20.3%). Compared to the all low class, patients in the all high class were significantly younger and more likely to be female. Compared to the other three classes, a higher percentage of the patients in the moderate level of physical symptoms and low level of psychological symptoms class were diagnosed with lung cancer. Compared to patients in the all low class, patients in the all high class reported significantly lower QOL subscale (i.e., physical well-being, psychological well-being social well-being) and total scores.

**Discussion and Implications:** The occurrence of common symptoms can be used to identify oncology outpatients who require more aggressive symptom management interventions.

## C2-0159

## ASSOCIATION BETWEEN POTASSIUM CHANNEL GENE POLYMORPHISMS AND SEVERE PERSISTENT PAIN FOLLOWING BREAST CANCER SURGERY.

Christine Miaskowski, RN, PhD, University of California, San Francisco, CA; Bradley Aouizerat, PhD, MAS, University of California, San Francisco, CA; Steven Paul, PhD, University of California, San Francisco, CA; Bruce Cooper, PhD, University of California, San Francisco, CA; Claudia West, RN, MS, University of California, San Francisco, CA

**Underwriting or Funding Source:** National Cancer Institute
**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** The purpose of this study was to evaluate for differences in potassium channel gene polymorphisms in patients with and without severe persistent breast pain following breast cancer surgery.

**Methods, Intervention and Analysis:** At seven timepoints (i.e., just prior to and monthly for six months following surgery for breast cancer), 398 women completed self-report questionnaires about demographic and clinical characteristics, as well as pain in their affected breast. Growth mixture modelling was used to identify latent classes of patients with distinct pain trajectories. Chi-square tests were used to evaluate for differences in potassium channel gene polymorphisms between the latent classes. For this analysis, patients who reported no breast pain during the six months of the study were compared to patients who reported severe persistent pain (i.e., worst pain scores of ~8).

**Findings and Interpretation:** Patients in the severe persistent pain class were significantly younger, had a higher number of comorbidities, and a poorer functional status. Between group differences were found in polymorphisms for the following potassium channel genes: KCND2 (p=.013), KCNJ3 (p=.003), KCNJ6 (p=.002), and KCNK9 (.041).

**Discussion and Implications:** This study provides preliminary evidence of distinct groups of breast cancer patients who differ in their experience with pain following breast cancer surgery. In addition, variations in potassium channel genes contribute to the development of severe persistent breast pain. These associations may help to identify high risk patients.

## C2-0167

## NAVIGATING THE SYSTEM OF CANCER GENETIC TESTING: CLINICAL GENETIC COUNSELORS' PERSPECTIVES OF PATIENT ACCESS, RESOURCES, AND FOLLOW-UP CARE.

Jean Boucher, PhD, RN, ANP, University of Massachusetts Worcester, Worcester, MA; Meghan Underhill, PhD, RN, Dana-Farber Cancer Institute, Boston, MA; Karleen Habin, BS, RN, Cancer Resource Foundation, Marlborough, MA; Debra Lundquist, MS, RN, Cancer Resource Foundation, Marlborough, MA; Marylou Woodford, RN, Cancer Resource Foundation, Marlborough, MA; Donna Guillaume, MS, RN, University of Massachusetts Worcester, Worcester, MA

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** The prominence of cancer genetics testing is outpacing current

patient access, resources and follow-up care by trained health care professionals including oncology nurses. Significant concerns include the impact of predictive genetic testing on patient outcomes involving cancer surveillance, detection and preventative care in the community (including those at a younger age). The purpose of this research was to describe genetic counselors' perspectives of patient access, resources, and follow-up care related to cancer genetic counseling and genetic testing. The study aims were to: 1) explore cancer genetic counselors experiences with patient access to predictive genetic testing, health information needs, and follow-up psychosocial support and counseling; 2) describe strategies utilized by cancer genetic counselors to facilitate genetic counseling and testing for cancer predisposition syndromes, including experiences with the Genetics Information for Treatment Surveillance and Support (GIFTSS) program, and, 3) identify needs for future research and community intervention development to assist genetic counselors in providing cancer genetic counseling and testing within underserved at risk communities.

**Methods, Intervention and Analysis:** A cross-sectional qualitative focus group method was employed with clinical genetic counselors (CGCs) Eligible CGCs who participated provided predictive genetic testing and counseling services within the last 5 years for identified at-risk patients for cancer susceptibility. A cohort of 3 focus groups included a total of 20 participants. Descriptive survey and qualitative content data were analyzed for common themes from focus group interview responses.

**Findings and Interpretation:** Results of qualitative responses revealed the emerging theme of Navigating the System of Genetic Testing and Counseling including subthemes of Access and Referrals, Barriers and Resources, Psychosocial Needs, and Patient/Provider Preparation. Navigating the System was portrayed by genetic counselor participants who described referral, financial, knowledge and preparation needs along with the impact on high-risk patients (including under or uninsured) accessing follow-up preventative care.

**Discussion and Implications:** Implications involve addressing the needs of patients, including under and uninsured, undergoing predictive cancer genetic testing and counseling from referral to follow-up care in the community. Genomics education and training is needed for all health care professionals, including oncology nurses, regarding provision of care to a high need and under-resourced patient community. Findings will inform development of future patient-centered tailored interventions aimed at reducing disparities in genetics related healthcare.

## C2-0176

## ASSOCIATIONS BETWEEN CATECHOLAMINERGIC, GABAERGIC, AND SEROTONERGIC GENES AND SELF-REPORTED ATTENTIONAL FUNCTION IN ONCOLOGY PATIENTS AND THEIR FAMILY CAREGIVERS.

John Merriman, PhD, RN, AOCNS®, University of Pittsburgh, Pittsburgh, PA; Christine Miaskowski, PhD, RN, FAAN, University of California, San Francisco, School of Nursing, San Francisco, CA; Bradley Aouizerat, PhD, UCSF School of Nursing, San Francisco, CA; Janine Cataldo, PhD, RN, UCSF School of Nursing, San Francisco, CA; Laura Dunn, MD, UCSF School of Medicine, San Francisco, CA; Bruce Cooper, PhD, UCSF School of Nursing, San Francisco, CA; Steven Paul, PhD, UCSF School of Nursing, San Francisco, CA

**Underwriting or Funding Source:** National Institute of Nursing Research (NINR) R01 grant (NR04835). Dr. Merriman was supported by an NINR F31 National Research Service Award (NR012604); an American Cancer Society (ACS) Doctoral Degree Scholarship in Cancer Nursing (DSCNR-10-087); and an Oncology Nursing Society (ONS) Foundation Doctoral Scholarship. He is currently supported as a Postdoctoral Scholar by an NINR T32, Interdisciplinary Training of Nurse Scientists in Cancer Survivorship Research (TNR011972A). Dr. Aouizerat was funded through a National Institutes of Health Roadmap for Medical Research Grant (KL2 RR624130). Drs. Dunn and Aouizerat were partially supported by a UCSF Academic Senate grant. Dr. Cataldo was partially supported by an ONS Genetic Fellowship Award. Dr. Miaskowski is funded by the ACS as a Clinical Research Professor.

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Subgroups of individuals may be at greater risk for changes in attentional function during cancer treatment because of variations in neurotransmission genes. In our previous analysis using growth mixture modeling, three latent classes of participants with distinct trajectories of self-reported attentional function (i.e., high, moderate-to-high, and moderate) were identified among 167 oncology patients and their 85 family caregivers. The purpose of the current analysis was to evaluate for associations between variations in candidate genes involved in catecholaminergic, gamma-aminobutyric acid (GABA)-ergic, and serotonergic mechanisms of neurotransmission and these attentional function latent classes.

**Methods, Intervention and Analysis:** Multivariable models controlled for age, number of comorbidities, functional status, and population stratification.

**Findings and Interpretation:** Variations in two catecholaminergic genes (i.e., ADRA1D rs4815675, SLC6A3 rs37022), a GABAergic gene (i.e., SLC6A1 rs2697138), and two serotonergic genes (i.e., HTR2A rs2296972, rs9534496) remained significant genotypic predictors of latent class membership in the multivariable models.

**Discussion and Implications:** These findings suggest that genetic variations in three distinct but related neurotransmission systems are involved in attentional function.

## C2-0169

## A QUALITATIVE EXPLORATION OF PARTICIPANT SATISFACTION WITH THE "WRITE SYMPTOMS" OVARIAN CANCER SYMPTOM MANAGEMENT TRIAL.

Janet Arida, RN, BSN, MA, University of Pittsburgh, Pittsburgh, PA; Heidi Donovan, PhD, University of Pittsburgh, Pittsburgh, PA; Judy Knapp, PhD, University of Pittsburgh, Pittsburgh, PA

**Underwriting or Funding Source:** NIH/NINR R01 NR010735 (Donovan)

**Poster Category:** Research Study

**Topic Significance and Study Purpose/Background/Rationale:** Time constraints and competing demands in oncology practice settings often result in inadequate symptom management for patients with advanced cancer. The internet has been viewed as a way to provide innovative approaches to symptom management; however, little is know about patients' satisfaction with these interventions. The WRITE Symptoms (parent) study is a three-arm RCT based on the Representational Approach (RA) to evaluate the efficacy of methods of delivering web-based symptom management interventions (nurse-delivered via message boards vs. self-directed modules) as compared with care-as-usual for women with recurrent ovarian cancer.

**Methods, Intervention and Analysis:** This ancillary study was designed to describe participant satisfaction with the WRITE Symptoms trial and to compare the positive and negative experiences of participants across the three arms of the study. It is a content analysis of 138 responses from 123 participants to three questions from a satisfaction survey administered at two time points in the parent study to elicit participants' perceptions of the positive and negative aspects of participation as well as their advice for future studies. Themes were identified through an iterative process leading to consensus between the three authors and participant responses were coded and analyzed.

**Findings and Interpretation:** Participants' comments tended to focus on themes related to various aspects of the study design, such as the perceived value of the monthly symptom assessment questionnaires; interaction with study personnel, including nurses; access to resources; and exposure to the Representational Approach. Participants' responses reflected their group assignment and level of intervention. Specific themes as well as comparisons between the three groups will be presented in the final poster.

**Discussion and Implications:** This analysis will provide valuable guidance for the design of future internet-based symptom management intervention.

## C2-0055

## TEXT MESSAGING TO PROMOTE ADHERENCE IN CANCER PATIENTS TAKING ORAL AGENT MEDICATIONS: AN INTEGRATIVE REVIEW.

Sandra Spoelstra, PhD, RN, Michigan State University College of Nursing, East Lansing, MI; Tracy DeKoekkoek, RN, Michigan State University, College of Nursing, East Lansing, MI; Charles Given, PhD, Michigan State University, Family Medicine, East Lansing, MI; Kimberly Ridenour, undergraduate nurse scholar, Michigan State University, College of Nursing, East Lansing, MI; Monica Schueller, BA, Michigan State University, College of Nursing, East Lansing, MI; Barbara Given, PhD, RN, FAAN, Michigan State University, College of Nursing, East Lansing, MI

**Underwriting or Funding Source:** Walther Cancer Foundation

**Poster Category:** Technology Use

**Topic Significance and Study Purpose/Background/Rationale:** A review of oral agent studies indicates less than an 80% rate of adherence; and 10% of those newly prescribed oral agents stop taking their medication. Lack of adherence to oral anti-cancer agents is a significant clinical problem that may result in treatment failure, hospitalization, loss of work, and, in some instances, death. Treatment is primarily the responsibility of patients who are prescribed oral agents. This review will discuss the foundation for developing a text message intervention and will examine evidence on text message interventions that improved adherence.

**Methods, Intervention and Analysis:** Whittemore and Knafl's review method was used, identifying studies via a search in CINAHL and PubMed using key words of text messaging and medication adherence; and reviewing of references.

**Findings and Interpretation:** 109 articles were retrieved, with 26 relevant. 9 articles met inclusion criteria. 3 articles examined adherence in those with asthma, 3 with HIV therapy, and one each for general chronic medications, immunosuppressants, and contraceptives. Total sample size was N=1,435; with 5 RCTs, 3 clinical trials, and one secondary analysis. Medication adherence improved in 8 of 9 studies. Adherence was measured by self-report, electronic means, pill counts, and pharmacy claims. Interventions included: standardized (same repeatedly) and tailored texts (specific to needs or selected by medication patient) with some requiring a response text; if varied messages if patient was adherent or non-adherent; and a scripted text to focus on attitudes and beliefs. Four studies that included receptivity measures found that the text message intervention was liked by participants and easy to use.

**Discussion and Implications:** Findings indicate a text messaging intervention, especially those that are two-way (requiring a response text), is a means of improving medication adherence in multiple diseases, and thus, may be effective in improving adherence in cancer patients who are prescribed treatment in pill form. Approximately 67.5% of adults own cell phones; 98% of those phones have text capability; and 60% use text message. This evidence supports exploring text messages as an intervention to promote adherence to oral agents; and whether lasting behavior modifications can be achieved using text messaging in adult oncology patients.

## C2-0062

## WILL INTERNET-BASED EDUCATION/REMINDERS REACH UNINSURED HISPANIC WOMEN?

Sylvia S. Estrada, DNP(c), WHNP-BC, MSHCM, CBCN®, Cedars-Sinai Medical Center, Los Angeles, CA; Catherine M. Dang, MD, Cedars-Sinai Medical Center, Los Angeles, CA; Catherine Bresee, MS, Cedars-Sinai Medical Center, Los Angeles, CA; Edward Phillips, MD, Cedars-Sinai Medical Center, Los Angeles, CA

**Poster Category:** Technology Use

**Topic Significance and Study Purpose/Background/Rationale:** According to the 2010 census, Hispanic Americans compromise 16% of the US population but expected to account for 30% of the population by 2050. LA County, the nation's most populous county, 48% of its residents are Hispanics. Hispanic women (HW) are more likely to be diagnosed with advanced breast cancer and to die of it compared with non-Hispanic white women. Breast cancer is now the leading cause of cancer death in HW. This disparity is in part due to differences in screening mammography use and access to care and treatment. Preventative efforts to increase mammography compliance can be achieved by public health announcements, community lectures, and utilization of promotoras. The purpose of this study was to determine if internet-based health education can reach uninsured HW to increase both breast cancer awareness and mammography use.

**Methods, Intervention and Analysis:** Participants were women attending the Telemundo health fair on March 11, 2012. A 25 question survey tool was developed to assess demographic information, knowledge of breast cancer screening and risk factors and use of mammographpy. 905 women attending the free health fair were surveyed by bilingual nurses. Data were analyzed by t-test or chi-square tests.

**Findings and Interpretation:** Mean age of respondents was 51.9 (18-88) ±14.2. 92% were born outside of the U.S. The highest educational attainment was: high school 39% and elementary school 38%;. 62% did not have health insurance. Insured HW were older (mean 54.8 ±16.5 vs. 50.4 ±12.6 yr) and had been in the U.S. longer (29.2 ±13 vs. 20.6 ±11.2 yr), $p < 0.001$. 67% speak only Spanish at home and 66% read only Spanish. 51% believed that women should have their first mammogram prior to the age of 40. Only 60% of those >40 had a mammogram within the past year. Women > 40 who had not had a mammogram had resided in the U.S. for fewer years (23.1 ±12.7 vs. 26.7 ±12.4 yr), and were less likely to have health insurance (25% vs. 44%), $p < 0.001$. Barriers to mammography use were noted to be: no insurance (49%), disbelief in their necessity (15%), time (14%), and money (12%). Most never use the internet (58%) or e-mail (64%). However, 70% have mobile phones of which 65% use text messaging daily. 45% wished to receive a text reminder about their mammogram.

**Discussion and Implications:** Significantly more non-insured HW use text messaging than the internet. Many would prefer educational information and mammogram reminders via text messaging. This would be a relatively inexpensive way to increase mammography use and decrease knowledge gaps among Hispanic women in LA County.

## C2-0181

## LIFE AFTER ESOPHAGEAL SURGERY.

Melissa Reynolds, RN, MSN, PCCN, Robert Wood Johnson University Hospital, New Brunswick, NJ; Kaying Lee, RN, BSN, OCN®, Robert Wood Johnson University Hospital, New Brunswick, NJ; Leigh Anne Schmidt, RN, MSN, Robert Wood Johnson University Hospital,

New Brunswick, NJ; Selena McClinton, RN, BSN, Robert Wood Johnson University Hospital, New Brunswick, NJ

**Poster Category:** Technology Use

**Topic Significance and Study Purpose/Background/Rationale:** Many patients were being discharged from the hospital without the proper discharge instructions. Patients were being readmitted due to poor discharge instructions.

**Methods, Intervention and Analysis:** Specific discharge instructions were written and developed for post operative patients that had esophageal surgery. This has helped the nurses to foster better communication and allow time for questions and answers that will improve there overall outcomes.

**Findings and Interpretation:** Patients are communicating that they feel informed and empowered about their care. Patients are survey and ask did they understand and receive discharge instructions. If a patient is readmitted we determine if they were readmitted due to not following or understanding the discharge instructions. Majority of the time we are seeing that the readmission is related to something other than a post surgical complication.

**Discussion and Implications:** Decrease readmissions, increased HCAPS with the nurse to patient communication. A staff nurse developed the discharge instructions and collaborated with the physician, and nurse infomatics.

## C2-0031

## CLINICAL UTILITY OF PULSE OXIMETRY SCREENING FOR SLEEP DISORDERED BREATHING IN PATIENTS WITH NON-SMALL CELL LUNG CANCER.

Genevieve Desaulniers, BSN, RN, Emory University, Atlanta, GA; Melinda Higgins, PhD, Emory University, Atlanta, GA; Catherine Vena, PhD, RN, Emory University, Atlanta, GA

**Underwriting or Funding Source:** NCI R21 CA125213

**Poster Category:** Technology Use

**Topic Significance and Study Purpose/Background/Rationale:** Nocturnal pulse oximetry patterns have been found to be sensitive and specific predictors of sleep disordered breathing (SDB) in adults (compared to polysomnography). A previous study found SDB was prevalent in a small sample of patients with non-small cell lung cancer (NSCLC). The exact etiology of this phenomenon is unknown and warrants further exploration relative to physiology and outcomes. As conducting polysomnography in all NSCLC patients is not financially feasible, identification of a low-cost, non-invasive, accurate screen for SDB is necessary to appropriately target patients needing further evaluation. The purpose of this secondary analysis was to determine the clinical utility of pulse oximetry as a screening tool for SDB in patients with NSCLC.

**Methods, Intervention and Analysis:** Participants completed the Pittsburg Sleep Quality Index (PSQI), one night of unobserved polysomnography, and two nights of at-home pulse oximetry. An Apnea/Hypopnea Index (AHI)>15 determined by polysomnography was used as a cutoff for moderate-severe SDB. Data were analyzed using descriptive statistics, spearman correlations, logistic regression, and receiver operating characteristic (ROC) curves. Models using an oxygen desaturation index (ODI) 4% and cumulative time<88%SaO2 (determined by pulse oximetry) as predictors of SBD were tested using ROC curves. Covariates included age, report of snoring (PSQI question 5e), and global PSQI score (PSQI).

**Findings and Interpretation:** Of the 31 participants (15 male, mean age 60.4±10.1, 77.4% Stage III-IV NSCLC), 61% of participants had moderate to severe SDB (AHI>15). ODI 4% predicted AHI>15 with 78.9% sensitivity and 58.3% specificity (c=.686; 95%CI: 0.486-0.887). An aggregated model including 4% ODI, age, and any report of snoring in the last week predicted AHI>15 with 88% sensitivity and 83% specificity (c=.858; 95%CI: 0.704-1.00).

**Discussion and Implications:** Pulse oximetry may provide clinicians with a low-cost, non-invasive method for routine assessment of SDB in NSCLC patients. Further study is needed with a larger sample to determine predictive validity and utility of pulse oximetry to screen for SDB in NSCLC.

## C2-0117

## YOUNG ADULTS' EXPERIENCES DURING HOSPITALIZATION AND TREATMENT FOR ACUTE LEUKEMIA.

Tara Albrecht, PhD, ACNP-BC, RN, Virginia Commonwealth University, Richmond, VA; Margaret Rosenzweig, PhD, CRNP-C, AOCNP®, University of Pittsburgh, Pittsburgh, PA

**Underwriting or Funding Source:** Sigma Theta Tau International- Small Grants T32 R011972: Interdisciplinary Training of Nurse Scientists

**Podium Session 1:** The Young Adult Cancer Experience

**Topic Significance and Study Purpose/Background/Rationale:** Research examining the experiences of young adults with cancer has found that they experience major disruptions in typical developmental trajectories, potential changes in social dynamics, stigmas and decreased self-esteem related to changes in physical appearance, and a loss of independence. Findings have also shown that young adults have a difficult time receiving inpatient care on units where there are significant age differences between them and the other patients (e.g. adult or pediatric units), creating such feelings as isolation and a perceived lack of understanding from unit staff related to psychosocial needs and impact of their illness. This concern is especially relevant for young adults diagnosed with acute leukemia who commonly experience lengthy aggressive in-hospital treatment regimens. The compilation of all these factors may potentially impact immediate and long-term physical and psychosocial wellbeing of these patients. The purpose of this study is to examine the physiological and psychological experiences of young adults hospitalized and actively receiving treatment for acute leukemia.

**Methods, Intervention and Analysis:** This is a descriptive qualitative study using phenomenological research design of young adults hospitalized for the treatment of acute leukemia. Qualitative data was collected using semi-structured interviews. Questions were asked to collect data related to the young adults experience during their diagnosis and treatment. Specific themed questions attempted to ascertain information related to symptoms, support networks, worry, and support needs. The semi-structured interviews were audiotaped and subsequently transcribed. The transcriptions were then loaded into Atlas.ti where content analysis was completed. Common emerging themes and categories found in Atlas.ti are being verified and used to disseminate the findings.

**Findings and Interpretation:** Data analysis is currently still in progress, however, several themes are beginning to emerge including: getting through, level of information, and feeling supported. The findings will then be further compared with current literature.

**Discussion and Implications:** Much information can and still needs to be learned from research aimed at further understanding the specific needs of young adults hospitalized for the treatment of acute leukemia. Knowledge gained from this study has the potential to improve individualized care delivery and the support that is available for young adults diagnosed with acute leukemia.

## C2-0077

## PERCEPTION OF TRAUMA IN YOUNG ADULT SURVIVORS OF ADOLESCENT CANCER: A PILOT STUDY.

Bethany Thelen, BSN, RN, University of Pittsburgh, Pittsburgh, PA;

Margaret Rosenzweig, PhD, CRNP-C, AOCN®, University of Pittsburgh School of Nursing, Pittsburgh, PA; Jean Tersak, MD, Children's Hospital of Pittsburgh of the University of Pittsburgh Medical Center, Pittsburgh, PA

**Underwriting or Funding Source:** Dr. Judith Erlen, PhD, Student Research Award through the University of Pittsburgh School of Nursing

**Podium Session 1:** The Young Adult Cancer Experience

**Topic Significance and Study Purpose/Background/Rationale:** Studies have reported higher levels of posttraumatic stress (PTS) in cancer survivors than healthy controls while others, however, have reported the occurrence of posttraumatic growth (PTG). Traditionally it has been assumed that the experience was either negative (PTS) or positive (PTG) and not able to occur concurrently. Thus, the purpose of this pilot study was to examine young adult survivors of adolescent cancer's perception of cancer as trauma.

**Methods, Intervention and Analysis:** A cross-sectional descriptive pilot study is underway to explore young adult survivors of cancer's perception of cancer as trauma. Survivors of adolescent cancer are recruited from a large pediatric hospital's outpatient Hematology/Oncology clinic. Participants must be diagnosed with cancer between the ages of 15 and 21, are two or more years after completion of cancer therapy, and have no evidence of disease recurrence. PTS is assessed using the reliable and valid Posttraumatic CheckList- Civilian Version (PCL-C) and PTG using the Posttraumatic Growth Inventory (PTGI). Descriptive statistics were conducted to characterize the incidence of PTS and PTG in this sample, and means, standard deviations, and scatterplots will be reported on the complete sample.

**Findings and Interpretation:** To date, 4 subjects of planned sample of 10 have been enrolled. Symptoms of PTSD (M=29.50, SD=8.69) were reported in addition to areas of PTG (M=68.50, SD=7.37). The most commonly reported PTS symptom is persistent avoidance (M= 12.00, SD=3.16). The most commonly reported areas of PTG are Relating to Others (M=26.75, SD=1.71) and Appreciation for Life (M=11.00, SD=2.16).

**Discussion and Implications:** Early preliminary data indicates the presence of PTS as well as areas of PTG suggesting that the two may co-occur. The cancer experience may trigger perceptions of personal growth, even with concurrent reports of distress associated with the cancer experience. We project a sample size of 10 participants to be included and presented in the analysis. This pilot study will provide critical information to design larger studies examining PTS and PTG in survivors of adolescent cancer. Advancing the knowledge of developmentally appropriate psychosocial care in this subpopulation of survivors warrants further attention in the literature.

## C2-0072

## PROPHYLACTIC, RISK-REDUCING SURGERY IN UNAFFECTED *BRCA*-POSITIVE WOMEN: QUALITY OF LIFE, SEXUAL FUNCTIONING AND SATISFACTION WITH DECISION.

Sharon Tollin, PhD, ARNP-BC, OCN®, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL

**Underwriting or Funding Source:** American Cancer Society Doctoral Scholarship in Cancer Nursing at the University of South Florida (DSCN-09-21301) and the National Institute of Nursing Research (NINR) Ruth L. Kirschstein National Research Service Award (F31NR01234-01)

**Podium Session 2:** Living With Increased Cancer Risk

**Topic Significance and Study Purpose/Background/Rationale:** Women with an inherited BRCA mutation are at significantly increased risk for breast and ovarian cancer, often diagnosed at an earlier age than sporadic cancers. Prophylactic surgery, with bilateral mastectomy and/or bilateral salpingo-oophorectomy, represents an option for risk reduction. Unaffected women, with a BRCA mutation and no personal history of cancer, face complex decisions. Oncology nurses are in a unique position to provide education, counseling and support. Multiple studies have documented the risk-reducing benefit of prophylactic surgery. To contribute to our limited knowledge of the psychosocial sequelae of prophylactic surgery, an exploratory study was conducted. The purpose of this nursing research study was to explore quality of life, sexual functioning, menopausal symptoms, and satisfaction with risk management decisions for unaffected, BRCA-positive women ages 21 to 50 (n=300).

**Methods, Intervention and Analysis:** A two-group cross-sectional, web-based survey design was utilized. Participants with any prophylactic surgery were compared with those without any prophylactic surgery. Instruments included: Quality of Life Index, Body Image Quality of Life Inventory, Self-Anchoring Striving Scale, Female Sexual Functioning Index, Menopausal Symptom Scale and the Satisfaction with Decision Scale. (Reliability and validity to be addressed in presentation.) Study recruitment is complete. Ongoing final statistical analyses include: descriptive statistics, independent samples t-tests, hierarchical multiple regression, and bivariate analysis with Pearson product-moment correlation.

**Findings and Interpretation:** Preliminary data analysis was conducted with women opting for any prophylactic surgery (n = 160) and those without prophylactic surgery (n = 71). Quality of life measures were essentially the same across the entire study sample. While controlling for age, prophylactic surgery predicted more severe symptoms of sexual dysfunction as measured by the Female Sexual Functioning Index. Prophylactic surgery similarly predicted menopausal symptoms and sleep difficulties. Prophylactic surgery also predicted higher levels of Satisfaction with Decision for hereditary cancer risk management.

**Discussion and Implications:** Initial findings from this exploratory study contribute to our understanding of quality of life in BRCA-positive women opting for risk-reducing prophylactic surgery. Evidence-based information is important for patient counseling, the informed-consent process, and decision-making relative to risk management. This study provides a framework for future collaborative, prospective research in this high-risk population.

## C2-0022

## NOT ALL HEREDITARY CANCER SYNDROMES ARE CREATED EQUAL: PATIENT EXPERIENCES LIVING WITH HEREDITARY PANCREATIC CANCER RISK.

Meghan Underhill, PhD, RN, AOCNS®, Dana-Farber Cancer Institute, Boston, MA; Emily Brown, MS, LGC, DFCI, Boston, MA; Rhonda Grealish, RN, DFCI, Boston, MA; Jaclyn Shienda, ScM, LGC, DFCI, Boston, MA; Sapna Syngal, MD, MPH, DFCI, Boston, MA; Donna Berry, PhD, RN, AOCN®, FAAN, DFCI, Boston, MA

**Underwriting or Funding Source:** Daisy Foundation

**Podium Session 2:** Living With Increased Cancer Risk

**Topic Significance and Study Purpose/Background/Rationale:** Background: Pancreatic cancer (PancCa) is now being recognized as a component tumor in many hereditary cancer syndromes, including hereditary breast and ovarian cancer (HBOC) which is a well known and frequently referenced cancer syndrome. Individuals with a family history suggestive of hereditary PancCa face lifetime risks of the disease from 3.6-40%, compared to 1.3% in the general population. Clinical and research experts are developing population based clinical care guidelines and screening recommendations related to PancCa risk; however, minimal research has focused on patient needs and experiences living with this risk. Purpose: (a) Understand the meaning and experience of living with familial PancCa risk;

and (b) compare findings to existing literature regarding experiences of persons with HBOC risk.

**Methods, Intervention and Analysis:** Participants were recruited from the Dana-Farber Cancer Institute. Eligibility criteria included not having PancCa and meeting familial or hereditary risk criteria to undergo PancCa screening. Semi-structured in-depth interviews were conducted and audio recorded. Content analysis was applied to transcripts in order to identify patterns, consistencies, and differences within the interviews. Narrative review of existing literature and preliminary data collected by the first author was completed to compare to patient reports within the PancCa risk interviews.

**Findings and Interpretation:** 15 (6 male, 9 female) participants have completed interviews. Similar to those with HBOC risk, family experiences with PancCa are paramount to each participant's story. However, within the PancCa narratives, stories of survivorship did not exist. Narratives from both those with PancCa risk and those with HBOC risk describe the impact of hereditary cancer risk on their view of health and health behaviors. Participants with PancCa risk expressed concern about mortality and personal health needs in light of the uncertainty surrounding the effectiveness of interventions for cancer detection and prevention. PancCa was perceived as "less popular" compared to other cancer risk syndromes and therefore the participants felt they had less support resources.

**Discussion and Implications:** The experience of living with increased PancCa is important for nursing science to explore. Stories shared by participants have both similarities and differences to narratives from women with HBOC risk. Future research is needed to fully understand this experience and develop supportive care interventions.

## C2-0145

## ADDRESSING CHALLENGES TO INCLUDING ONCOLOGY CONTENT IN ADVANCED PRACTICE NURSING CURRICULA.

Janet Fulton, PhD, RN, ACNS-BC, FAAN, Indiana University, Indianapolis, IN; Joan Lockhart, PhD, RN, CORLN, AOCN®, CNE, FAAN, Duquesne University, Pittsburgh, PA; Michele Galioto, MSN, RN, Oncology Nursing Society, Pittsburgh, PA

**Underwriting or Funding Source:** Susan G. Komen for Cure Foundation through a grant awarded to ONS

**Podium Session 3:** Moving Forward With Education and EBP

**Topic Significance and Study Purpose/Background/Rationale:** Cancer care is shifting from acute, inpatient treatment to long-term chronic illness management in outpatient and home settings. Aims: 1) to identify oncology content in master's level advanced practice nursing educational programs for clinical nurse specialists (CNS) and nurse practitioners (NP); 2) to identify strategies for and barriers to including advanced oncology content in CNS and NP educational programs. Adequate oncology content is necessary for CNS and NP to provide care to persons with various stages of cancer and recovery in multiple settings, and to lead the development of innovative models of care delivery.

**Methods, Intervention and Analysis:** A non-experimental survey design was used to obtain participant school's ratings regarding the depth and importance of oncology concepts taught in their curricula. Accredited master's level graduate CNS and NP nursing programs were invited to participate. A 43-item survey, Cancer Nursing Curriculum Survey (CNCS), was created by the researchers. Content validity was based on a comprehensive oncology literature review and standards. Deans were invited to participate via email explaining the study and providing a direct link to the electronic survey. Following descriptive analysis of the survey data, selected participants were invited to attend a national focus group where the survey findings were presented and participants discussed challenges, opportunities and barriers for improving oncology education for advanced practice nurses. Content analysis was used to analyze focus group data.

**Findings and Interpretation:** After repeated invitations, 28 (8%) of a possible 347 identified master's level programs responded to the survey. Across all items importance of content was rated higher then depth of content. Lack of time was the most frequently identified barrier to including oncology content in the curriculum. Focus group findings suggest the need for oncology faculty champions, greater faculty resources (simulations, case studies, expert guest speakers, etc.) and more opportunities for supervised clinical experiences.

**Discussion and Implications:** Graduates with limited knowledge of oncology nursing increase the burden on health care systems to attract and educate/prepare nurses to practice in clinical settings with cancer patients. An opportunity exists for partnerships between oncology organizations and nurse educators and between health care organizations and schools of nursing to increase participation in educational/clinical experiences.

## C2-0053

## THE EXPERIENCE OF IMPLEMENTING EVIDENCE-BASED PRACTICE IN NURSING: A QUALITATIVE ANALYSIS.

Margaret Irwin, PhD, RN, MN, Oncology Nursing Society, Pittsburgh, PA; Rosalie Bergmen, DNP, RN, OCN®, Novartis Pharmaceuticals Corporation, Allison Park, PA; Rebecca Richards, DNP, RN, NP-B, AOCN®, Roche-Genentech BioOncology, Edgar, WI

**Underwriting or Funding Source:** The 2009 and 2010 IEBPC program was supported by a grant from sanofi-aventis U.S. and by the ONS Foundation

**Podium Session 3:** Moving Forward With Education and EBP

**Topic Significance and Study Purpose/Background/Rationale:** Gaps and delays in translating evidence into clinical practice are well recognized. The need to understand the experience of EBP change in nursing has been identified to develop effective implementation strategies to address factors that affect the process of EBP implementation. The purpose of this work was to describe the experience of implementing EBP by nurses who participated in the ONS Foundation Institute for Evidence Based Practice Change (IEBPC) program.

**Methods, Intervention and Analysis:** The sample was 140 reflection log entries from 19 teams that participated in the IEBPC program in 2009 and 2010. As part of program activities, teams were asked to write monthly reflections about team experiences on a secure virtual office website, by responding to questions about actions taken, responses observed and what was learned. Verbatim narratives were de-identified and downloaded for qualitative analysis. Content analysis was independently performed by two authors to identify themes and concepts. Audit trails were maintained by documentation on verbatim documents. Authors compared, organized, and merged themes until consensus was reached.

**Findings and Interpretation:** Nurses identified time, support, teamwork, communication, planning, and maintaining focus as critical success factors. Difficulties encountered included competing priorities, staff turnover, and measurement. EBP implementation enabled participants to learn about their own practice, to experience empowerment through the evidence, and it ignited the spirit of inquiry, teamwork and multidisciplinary collaboration. Many of these themes are in concert with findings of others. However, the need to actively maintain focus has not been described previously. In contrast to challenges and barriers to EBP typically identified, experiences here were also uplifting and empowered the nurses involved. These findings suggest that EBP focus in the nursing profession not only improves patient care, but also can inspire and energize nurses.

**Discussion and Implications:** Experiences and lessons learned from nurses implementing EBP can be useful to others in planning EBP implementation. Knowledge of critical success factors and helpful strategies can assist nurses to incorporate these into planning effective EBP implementation. Findings suggest that the process of implementing an EBP change can also be a vehicle for building teamwork and interdisciplinary collaboration.

## C2-0127

## PREPARING NURSES FOR EVIDENCE-BASED PRACTICE CHANGE: A NOVEL, COMPETENCY-BASED APPROACH.

Cynthia Smith, RN, BA, MSN, AOCN®, Harrison Medical Center, Bremerton, WA; Margaret Irwin, RN, MN, PhD, Oncology Nursing Society, Pititsburgh, PA; Amy Deutsch, DNP, RN, AOCNS®, Memorial Hermann Cancer Centers, Houston, TX

**Underwriting or Funding Source:** ONS Foundation (2009–2011) Sanofi-Aventis US (2009 -2010) Bristol Myers Squibb (2011).

**Podium Session 3:** Moving Forward With Education and EBP

**Topic Significance and Study Purpose/Background/Rationale:** The Institute of Medicine and American Nurses Credentialing Center report integration of research into clinical practice fosters superior nursing care and patient outcomes, compelling health care organizations, nursing education programs, and nursing associations to offer nurses opportunities for interdisciplinary collaboration. Exemplary nursing practices and work redesign are critical to ANCC Magnet designation. Evidence-based practice (EBP) change identifies then integrates research into clinical settings. However, EBP change requires certain skill-sets. The American Association of Colleges of Nursing developed Quality and Safety Education for Nurses (QSEN) to enhance faculty ability to educate new nurses about EBP competency. The purpose of this study was to evaluate the effectiveness of an educational program, the Institute for EBP Change (IEBPC), to positively impact nurses' confidence in EBP-related skills and EBP change implementation.

**Methods, Intervention and Analysis:** The study design was quasi-experimental with pre-and-post paired t-test analysis of EBP confidence levels, aligning with EBP competency of QSEN. The IEBPC sample size was 65 participants. Team cohorts were managers, advanced practice and staff nurses with varied EBP skill and experience. Participants demonstrating interest in EBP created sample bias. The educational intervention included a 2.5 day interactive conference, project planning, and personalized mentoring for a year. Pre-and-post conference web sessions prepared teams, reinforced content and addressed barriers. Monthly blogs encouraged reflective learning. After one year, teams presented EBP project results. Mentors scored practice change results by consensus using Helfrich's criteria. Reliability is denoted by Chronbach alpha confidence level and mentor consensus. Desired care outcomes are more likely achieved by confident, EBP-competent staff.

**Findings and Interpretation:** Conference evaluations were highly positive. Pre-and-post conference mean confidence score analysis revealed significantly increased confidence in 13 of 18 items evaluated ($p < .05$). By consensus ratings, 87% of teams realized plan objectives, 42% showed partial achievement of targeted EBP change and 26% demonstrated full evidence of desired practice change. EBP change metrics are ill-addressed in the literature; guideline compliance is one measure.

**Discussion and Implications:** This study sought to answer questions surrounding EBP implementation aspects, e.g. developing competency and quantifying practice change. Knowledge gained may shape future nursing curriculum and frame EBP change efforts.

## C2-0047

## A PILOT FEASIBILITY STUDY OF HYPOTENSIVE HEMATOPOIETIC MALIGNANCY PATIENTS' USCOM READINGS.

Michelle Parmentier, BSN, Barnes-Jewish Hospital, St. Louis, MO; Thomas Ahrens, RN, PhD, FAAN, Barnes-Jewish Hospital, St. Louis, MO; Roxanne Dalske, RN, BSN, Barnes-Jewish Hospital, St. Louis, MO; W. Dean Klinkenberg, PhD, Barnes-Jewish Hospital, St. Louis, MO; Patricia Potter, RN, PhD, FAAN, Barnes-Jewish Hospital, St. Louis, MO; Geoffrey Uy, MD, Washington University School of Medicine, St. Louis, MO; Kathleen Rensing, RN, MSN, ANP-BC, Barnes-Jewish Hospital, St. Louis, MO

**Podium Session 4:** Technology Driven Practice

**Topic Significance and Study Purpose/Background/Rationale:** Traditionally, outcomes for hematopoietic stem cell critical care patients have been considered poor, with 37% survival in 2004, but are improving with 56% survival in 2006. Due to cardiopulmonary toxicities secondary to high-dose chemotherapy, radiation therapy, and sepsis, improved hemodynamic monitoring may offer insight, but has not been studied in this population due to the invasive nature of the equipment available and the resultant risk of infection. Noninvasive technology in the form of an ultrasound monitor has become available. Nurses on a BMT unit with dual specialties of oncology and critical care designed and conducted the study.

**Methods, Intervention and Analysis:** This prospective feasibility study tested the USCOM device in measuring hemodynamic changes in hypotensive hematopoietic malignancy patients to determine inter-rater agreement between two independent Ultrasonic Cardiac Output Monitor (USCOM) users. Aim 1 measured stroke volume (SV) and peak velocity (Vpk) in hemodynamically stable hematopoietic malignancy patients and Aim 2 measured the same parameters in hypotensive hematopoietic malignancy patients. Two independent USCOM users scanned patients to measure SV and Vpk. Inter-rater reliability was assessed using the Intraclass Correlation Coefficient (ICC) for USCOM users scanning separate groups: hemodynamically stable patients (patients with systolic blood pressures > 95mmHg and mean arterial pressures > 65mmHg) and hypotensive patients (patients with systolic blood pressures < 95mmHg and mean arterial pressures < 65mmHg). Confidence intervals (CIs) were calculated for Aim 1 SV, Aim1 Vpk, Aim 2 SV, and Aim 2 Vpk.

**Findings and Interpretation:** All ICCs were above 0.80. For the hemodynamically stable group (n=41), the ICCs were 0.91 and 0.86 for stroke volume and peak velocity, respectively. For the hypotensive group (n=40), the ICCs were 0.98 and 0.96 for stroke volume and peak velocity, respectively. Two nurses taking USCOM readings of SV and Vpk can consistently achieve high inter-rater agreement in hemodynamically stable and hypotensive patients with hematopoietic malignancies.

**Discussion and Implications:** The USCOM has great potential for non-invasive hemodynamic monitoring of patients with hematopoietic malignancies. Nurses should study the efficacy of employing USCOM scans as a routine measurement in hypotensive patients.

## C2-0035

## DEVELOPMENT AND TESTING OF AN ELECTRONIC INDIVIDUALIZED QUALITY OF LIFE TOOL.

Susan S. Tavernier, PhD, APRN-CNS, AOCN®, University of Utah, Salt Lake City, UT; Susan L. Beck, PhD, ARPN, AOCN®, FAAN, University of Utah, Salt Lake City, UT

**Podium Session 4:** Technology Driven Practice

**Topic Significance and Study Purpose/Background/Rationale:** Quality of life is essential to consider when making

informed decisions about one's cancer and its treatment, yet patients are often unable to articulate what is important to them during visits with their health care provider(s). The Patient Generated Index (PGI) is a novel tool designed to address health-related quality of life assessment, shifting the focus of the current conceptualization of health-related quality of life to the individual and what matters most in his or her life. However, the PGI has only been available in paper/pencil format. The purpose of this mixed methods pilot study was to evaluate the usability and acceptability of the digitized Patient Generated Index (ePGI) in the outpatient radiation oncology setting.

**Methods, Intervention and Analysis:** This prospective study was comprised of the surveys and recorded interviews. We used convenience sampling to accrue radiation clinicians and adult patients. We used an adaptive design approach to test usability of the ePGI - an iterative process in which the ePGI was completed by the end users (patients), making improvements based upon the difficulties identified. The process was repeated until no further problems occurred. To evaluate acceptabilityof the ePGI, patients completed the ePGI and a 16 item survey rating previous computer use and ease of ePGI completion. Interviews with radiation oncologists and nurses explored the potential use of the ePGI at the point of care. Interview data were coded for themes and quantitative data was limited to descriptive analysis.

**Findings and Interpretation:** Three iterations of ePGI administration yielded a usable prototype. Patients (n=15) used computers often but not touch screen technology. Patients found the ePGI easy (100%) and understandable (100%). Interestingly, 50% of patients did not usually share this information with their nurse or physician. Physician (n=4) and nurse (n=4) interviews revealed the ePGI useful to initiate dialogue about quality of life issues and reveal infrequent or unusual effects of treatment, assisting in symptom management.

**Discussion and Implications:** Results support the feasibility of using the ePGI at the point of care. Interviews suggest the ePGI may help restructure patient/provider interactions and enhance meaningful dialogue. Larger studies exploring the impact of the ePGI on patient/provider communication are needed.

## C2-0019

## A SMART PHONE APPLICATION (APP) FOR CANCER RESOURCES.

Deborah Walker, DNP, CRNP, AOCN®, University of Alabama at Birmingham, Birmingham, AL

**Underwriting or Funding Source:** Women's Breast Health Fund Community Foundation of Greater Birmingham

**Podium Session 4:** Technology Driven Practice

**Topic Significance and Study Purpose/Background/Rationale:** In an effort to prepare for the 2015 recommendation from the American College of Surgeons (ACoS) Commission of Cancer requirement for cancer centers to implement screening programs for psychosocial distress, an APP identifying local community resources for cancer patients was developed. This APP was designed to take those distressing factors identified on the National Comprehensive Cancer Network Distress Screening tool and link it with available resources in a local community as possible referral sources.

**Methods, Intervention and Analysis:** Cancer resources were identified in collaboration with an interdisciplinary team and students of an oncology class. The APP was designed by a project team member with input from the team and resources were installed. Nurses in an oncology clinic and an interdisciplinary breast clinic were asked to use the APP. They were provided iPods and/or iPads to test the software and locate cancer resources. The nurses were surveyed at several points over the course of three months using a modified Questionnaire for User Interaction Satisfaction (QUIS) 7.0.

**Findings and Interpretation:** The outcome of this project provided the PI and developer with information to make further modifications to the APP. Once modifications were done, further dissemination was scheduled. The APP also provided the oncology nurse with quick and easy access to patient resources at the chair side. It served as an excellent resource in making referrals for patients with identified areas of distress.

**Discussion and Implications:** As oncology clinical practices move toward the ACoS recommendation of measuring distress in their cancer patients, a list of resources will be needed to make appropriate referrals. This mobile and convenient method of resource identification can be adapted for any environment and be a real time saver for the nurse.

## C2-0121

## IMPACT OF WORKPLACE CHARACTERISTICS ON QUALITY OF LIFE FOR BREAST CANCER SURVIVORS.

Jessica Keim-Malpass, PhD, RN, University of Virginia School of Nursing, Charlottesville, VA; Beverly Levine, PhD, Wake Forest School of Medicine, Winston-Salem, NC; Suzanne Danhauer, PhD, Wake Forest School of Medicine, Winston-Salem, NC; Nancy Avis, PhD, Wake Forest School of Medicine, Winston-Salem, NC

**Underwriting or Funding Source:** The research reported in this publication was supported by the National Cancer Institute of the National Institute of Health under award number R25 CA122061 and Department of Defense grant DAMD17-01-0447, Investigating Mechanisms to Explain Age-Related Di

**Podium Session 5:** Quality of Life Challenges in the Posttreatment Setting

**Topic Significance and Study Purpose/Background/Rationale:** Following a diagnosis of cancer, maintaining employment, or returning to work after a certain period of time off, is important for cancer survivors, their families, and society in general. There is some evidence that maintaining employment post-diagnosis can positively affect quality of life (QOL) of breast cancer survivors, but this area has not been adequately studied. Additionally, workplace characteristics that impact return-to-work for cancer survivors have not been described in great detail. The purpose of this analysis was to determine if workplace characteristics could predict participant QOL at 18-months post-enrollment among breast cancer survivors.

**Methods, Intervention and Analysis:** This prospective observational study was conducted among women with stage I-III breast cancer who were employed prior to diagnosis and also employed at the 18-month study point. The primary study outcome was quality of life at 18 months post-enrollment in the study measured by the FACT-B instrument (and subscales including physical, social, functional, emotional well-being, and breast cancer scale). Independent variables included: patient-related variables, cancer-related variables, and workplace characteristics. Analyses included: descriptive statistics, factor validity of workplace questionnaire items using exploratory factor analysis (EFA), and multivariate linear regression to explore the relationship between workplace characteristics and QOL.

**Findings and Interpretation:** A total of 221 patients were included in this study. EFA confirmed three factors of the study instrument including "supportive work environment", "work capacity", and "financial worries" that accounted for 60.1% of the total variance. Financial worries and work capacity were statistically significant predictors of FACT B overall, PWB, EWB, FWB. Supportive work environment and work capacity were statistically significant predictors of SWB.

**Discussion and Implications:** After controlling for patient and cancer-related variables, workplace characteristics were independent predictors of quality of life for breast cancer survivors at 18

months post-enrollment in this study. Women with breast cancer have reported that they receive little advice from clinicians about returning to work. Oncology nurses should have a vested interest in their patients' ability to maintain or return to employment and workplace characteristics that are associated with positive experiences. Additionally, the relationship between work, QOL and cancer survivorship is an area in need of further nursing research.

## C2-0139

## COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA OUTCOMES IN WOMEN AFTER PRIMARY BREAST CANCER TREATMENT: A RANDOMIZED CONTROLLED TRIAL.

Ellyn E. Matthews, PhD, RN, AOCNS®, University of Colorado, College of Nursing, Aurora, CO; Ann M. Berger, PhD, APRN, AOCNS®, FAAN, University of Nebraska Medical Center, Omaha, NE; Sarah J. Schmiege, PhD, Department of Biostatistics and Informatics, Colorado School of Public Health, University of Colorado, Aurora, CO; Paul F. Cook, PhD, University of Colorado, College of Nursing, Aurora, CO; Michaela S. McCarthy, RN, MS, University of Colorado, College of Nursing, Aurora, CO; Camille M. Moore, MS, Department of Biostatistics and Informatics, Colorado School of Public Health, University of Colorado, Aurora, CO; Mark S. Aloia, PhD, CBSM, National Jewish Health, Denver, CO

**Underwriting or Funding Source:** National Institute of Health and National Institute of Nursing Research (1K23NR010587)

**Podium Session 5:** Quality of Life Challenges in the Posttreatment Setting

**Topic Significance and Study Purpose/Background/Rationale:** Approximately 30-50% of women with breast cancer experience insomnia, which can affect treatment recovery and quality of survivorship. The purpose of the study is to examine the effect of cognitive-behavioral therapy for insomnia (CBTI) on sleep improvement, daytime symptoms and quality of life (QOL) in breast cancer survivors (BCSs) after cancer treatment. Insomnia is a clinical syndrome characterized by complaints of difficulty initiating or maintaining sleep, or non-restorative sleep, lasting for at least one month that causes significant distress or impairment in functioning. Evidence suggests that insomnia has a negative impact on immune functioning, and may have implications for tumor progression and survival. Breast cancer-related insomnia has been shown to have a profound effect on QOL and daily functioning. Several studies of BCSs have tested nonpharmacologic sleep interventions. Few studies, however, examine CBTI and comprehensive outcomes in breast cancer survivors. Our interdisciplinary team, lead by an oncology nurse scientist, hypothesized that CBTI compared to behavioral placebo treatment (BPT), would reduce sleep latency (time to fall asleep after lights out), sleep aid use and dysfunctional sleep beliefs; increase sleep efficiency (ratio of actual sleep time to time spent in bed X 100), and improve perceived sleep quality, QOL, functioning, fatigue, mood, and sleep knowledge.

**Methods, Intervention and Analysis:** In this prospective, longitudinal, randomized controlled trial, 56 middle-aged BCSs with chronic insomnia were recruited from oncology clinics, breast cancer support groups and communities in Western U.S. Women were randomly assigned to 6 weeks of CBTI or BPT and completed measures of sleep, QOL, functioning, fatigue, and mood at baseline, post-intervention, and at 3 and 6 month follow-up. Sleep outcomes were measured by a daily sleep diary. Sleep medication use, insomnia severity, QOL, physical function, cognitive function, fatigue, depression, anxiety, and sleep attitudes/knowledge were measured by established questionnaires found to be valid and reliable patients with cancer and insomnia. Recorded treatment sessions were reviewed for treatment integrity by an independent consultant certified in behavioral sleep medicine. Fidelity checklists were completed after each session.

**Findings and Interpretation:** Consistent with the literature, sleep efficiency and latency improved more in the CBTI group compared to BPT; this difference was maintained during follow-up. Women in the CBTI group had less subjective insomnia, greater improvements in physical and cognitive functioning, positive sleep attitudes and increased sleep hygiene knowledge. There were no group differences in improvement relative to QOL, fatigue or mood.

**Discussion and Implications:** Nurse-delivered CBTI appears beneficial for BCSs' sleep latency/efficiency, insomnia severity, functioning, sleep knowledge and attitudes more than active placebo, with sustained benefit over time. Nurses are in a unique position to identify and manage insomnia symptoms in cancer survivors. Sleep assessment and interventions should be incorporated into survivorship programs. Oncology nurses can contribute an important patient-centered perspective in interdisciplinary teams focused on improving insomnia symptoms. Similarly, oncology nurses play an important role in generating and synthesizing evidence in future sleep studies of cancer survivors.

## C2-0111

## DO ILLNESS/TREATMENT FACTORS MODERATE THE INFLUENCE OF PATIENT FACTORS ON ADHERENCE TO HORMONAL THERAPY IN WOMEN WITH BREAST CANCER?

Catherine Bender, PhD, RN, FAAN, University of Pittsburgh School of Nursing, Pittsburgh, PA; Heidi Donovan, PhD, RN, University of Pittsburgh School of Nursing, Pittsburgh, PA; Jacqueline Dunbar-Jacob, PhD, RN, FAAN, University of Pittsburgh School of Nursing, Pittsburgh, PA; Amanda Gentry, MPH, University of Pittsburgh School of Nursing, Pittsburgh, PA; Margaret Rosenzweig, PhD, RN, University of Pittsburgh School of Nursing, Pittsburgh, PA; Paula Sherwood, PhD, RN, FAAN, University of Pittsburgh School of Nursing, Pittsburgh, PA; Susan Sereika, PhD, University of Pittsburgh School of Nursing, Pittsburgh, PA

**Underwriting or Funding Source:** ONS Foundation and the National Cancer Institute (R01 CA107408)

**Podium Session 6:** Exploring Paths to Decision-Making

**Topic Significance and Study Purpose/Background/Rationale:** Non-adherence to hormonal therapy for breast cancer may compromise therapeutic efficacy, and result in higher hospitalization rates and longer lengths of stay. The basis for non-adherence likely includes patient factors and illness/treatment factors. However, the interactive effects of these factors may provide the dominant explanation for non-adherence. The purpose of this study was to explore the moderation effects between patient and illness/treatment factors when predicting non-adherence.

**Methods, Intervention and Analysis:** Using a prospective, repeated measures design, 91 women (aged 56.7+9.7 years) with early stage breast cancer were monitored for adherence to the first 18 months of therapy using electronic event monitoring (Aardex Ltd.). Patient factors; depression (Beck Depression Inventory II), anxiety (Profile of Mood States Tension/Anxiety), physical function (Medical Outcome Study Short Form-36), social support (Interpersonal Support Evaluation List) and illness/treatment factors; stage, chemotherapy use, regimen complexity, comorbidities, treatment/disease-related symptoms (Breast Cancer Prevention Trial Symptom Inventory), financial hardship (Measure of Financial Hardship, Modified Collection of Indirect and Nonmedical Direct Costs) and perceived therapeutic

efficacy (Beliefs About Medications Questionnaire) were assessed before therapy and at six month intervals up to 18 months. Random coefficient modeling was used to examine associations between adherence and patient and illness/treatment factors; regression analyses were performed to explore moderation effects.

**Findings and Interpretation:** Adherence declined linearly over the 18 months with the percentage of prescribed doses taken (mean = 0.536; p = 0.003) and percentage of days with correct intake (mean = 0.602; p = 0.0009). Patient and illness/treatment factors that predicted non-adherence included higher pre-therapy depression (p<.001) and anxiety (p<.01), poorer pre-therapy physical functioning (<.05), and greater bother due to cognitive symptoms (p<.05), musculoskeletal pain (p<.05), weight concerns (p<.01), and gynecological symptoms (p<.01). Significant interaction effects were predominantly observed at baseline. The most common illness/treatment factors that modified associations between patient factors and nonadherence were greater bother related to symptoms (p<.001) and greater out of pocket costs (p<.0001).

**Discussion and Implications:** To our knowledge, this is the first study of the influence of interaction effects of patient and illness-treatment factors on non-adherence to hormonal therapy in breast cancer. The dominant role of symptoms and financial hardship in moderating the effects of negative mood on non-adherence provides important information for intervention development promoting adherence.

## C2-0183

## INFLUENTIAL VARIABLES ON THE TIMING OF HELP-SEEKING BEHAVIOR IN LUNG CANCER PATIENTS.

Lisa Carter-Harris, PhD, MSN, APRN, NP-C, Indiana University (IUPUI), Indianapolis, IN

**Podium Session 6:** Exploring Paths to Decision-Making

**Topic Significance and Study Purpose/Background/Rationale:** Lung cancer (LC) kills more people than any other cancer worldwide because it is often diagnosed at an advanced stage. One influential factor is delayed help-seeking behavior (HSB). LC is thought to be asymptomatic until advanced; however, many early-stage patients have symptoms prior to diagnosis, but do not link their symptoms with LC. Earlier LC symptom recognition and earlier HSB may decrease LC mortality. Addressing the issue of decreasing the time to diagnosis is essential and understanding influential factors is important. The purpose was to explore the influence of healthcare system distrust (HCSD), LC stigma, and smoking status on the timing of HSB in individuals with LC symptoms. It was hypothesized that greater HCSD, higher stigma levels, and positive smoking status would predict increased time from symptom onset to help-seeking.

**Methods, Intervention and Analysis:** Descriptive, cross-sectional, correlational design with convenience sample of 93 LC patients. Data were collected with questionnaires measuring distrust, stigma and social desirability. An in-person interview collected demographic, smoking status, timing and medical characteristic data.

**Findings and Interpretation:** Hierarchical regression assessed the extent HCSD, LC stigma, and smoking status contributed to prediction of greater time to seek help. Confounding variables (ethnicity, SES, social desirability) were entered at step 1 accounting for 10% of variance in time to seek help (F3,88=3.27;p<.05). In step 2, HCSD and stigma accounted for an additional 13% of variance (F6,85=4.23;p<.01). The model explained 23% of the variance in time to seek help; ethnicity, perceived financial status, HCSD, and LC stigma were significant predictors.

**Discussion and Implications:** HCSD has been associated with lower screening levels in breast and cervical cancers supporting a need for increased understanding of distrust in individuals with LC symptoms. LC stigma has not been studied as predictive of delayed HSB. However, it has been suggested as a contributor to delayed presentation. This study supports LC stigma as a unique predictor variable in greater time to seek help. Distrust and stigma experienced by LC patients may act as barriers to timely diagnosis. Findings indicate a public health need for increasing LC symptom awareness, decreasing stigma and distrust, and decreasing delays in HSB. Future research should target understanding these phenomena in LC.

## C2-0044

## A DECISION AID TO IMPROVE SMOKING ABSTINENCE FOR FAMILIES FACING CANCER.

Karen McDonnell, PhD, RN, OCN®, University of Virginia School of Nursing, South Riding, VA; Linda Bullock, PhD, RN, FAAN, University of Virginia, Charlottesville, VA; Patricia Hollen, PhD, RN, University of Virginia, Charlottesville, VA; Janie Heath, PhD, APRN-BC, FAAN, University of Virginia, Charlottesville, VA; Benjamin Kozower, MD, MPH, University of Virginia, Charlottesville, VA

**Underwriting or Funding Source:** Doctoral Degree Scholarship in Cancer Nursing 121284-DSCN-11-199-01-SCN from the American Cancer Society.

**Podium Session 6:** Exploring Paths to Decision-Making

**Topic Significance and Study Purpose/Background/Rationale:** Compelling evidence exists that continued smoking after a cancer diagnosis has substantial adverse effects. Most cessation interventions focus on individual behavior; however, family members who smoke are barriers to success. The long-term goal of this research is to improve outcomes for patients scheduled for thoracic surgery and for their family members who smoke cigarettes. The major objective is to develop and test a multidisciplinary, multi-component, theory-based decision aid, "Tobacco Free Family", as a tailored smoking cessation intervention. The decision aid encompassed three decisions: "Stop Smoking before Surgery", "Establish a Smoke-free Home", and "Stay Smoke-free."

**Methods, Intervention and Analysis:** This study's design was guided by the principles of social cognitive theory and the conflict theory of decision making. Using a 6-month prospective, one-group repeated measures, mixed-method design, this feasibility study evaluated recruitment, retention, adherence, and acceptability from the preoperative visit in a university thoracic surgery clinic. A multi-component intervention was administered to all participants: Brief counseling by a surgeon or thoracic team member, a RN administered theory-based decision-making tutorial and tailored decision aid followed by an evidence-based program "SMOKE FREE and Living It" with planned telephone and Internet follow-up with a study specific website. The quantitative analysis used descriptive statistics. The qualitative segment used thematic analysis.

**Findings and Interpretation:** Eighteen families were approached and 16 participants (8 families) enrolled (44% recruitment rate, 100% retention rate) over a 6-month recruitment period. Enrolled patients were all male. Enrolled family members were spouses or girlfriends. Patients had greater adherence and rated the decision aid higher (as highly acceptable) compared to family members. Patients had greater abstinence (100%) than family members (25%) before surgery and at 6 months (63% vs. 25%). More than half the families established a smoke-free home. Qualitative interview themes included: (1) The intervention's timing was convenient and acceptable; (2) involving household family members who smoke was important; and (3) Decision Balance Sheets helped patients and family members reflect on their health and reasons to stop smoking.

**Discussion and Implications:** The 56% refusal rate was greater than anticipated, yet similar to other, related studies. This study's 100% retention rate shows that the enrolled patients and their

spouses were motivated to stop smoking and needed and appreciated the support. Findings suggest that using an interactive theory-based decision aid as part of a family dyad (patient + partner) intervention is feasible. This study offers insights about smoking cessation intervention for patients and their family members at the time of a cancer diagnosis. The findings are limited by the small sample size and one-group design. The results will be used to enhance the intervention, its delivery, and fidelity.

## C2-0155

## EARLY INTEGRATION OF PALLIATIVE CARE IN PATIENTS WITH PANCREATIC CANCER: A RETROSPECTIVE STUDY FOR QUALITY IMPROVEMENT.

Nina Grenon, DNP, ANP/GNP-BC, RN, AOCN®, Dana-Farber Cancer Institute, Boston, MA

**Underwriting or Funding Source:** Friends of the Dana-Farber Cancer Institute

**Podium Session 7:** Gaps in Care for the Oncology Patient

**Topic Significance and Study Purpose/Background/Rationale:** Many patients with pancreatic cancer receive palliative care only at the end of life despite the fact that the course of illness is plagued with physical, emotional symptoms and existential distress. There is evidence that late referrals to palliative care are insufficient to alter patients' quality of life and care outcomes. There is strong evidence that combining palliative care with standard cancer treatment improves quality of life for those patients with in metastatic cancer and in some cases can help extend survival. Early incorporation of palliative care for patients with incurable cancer is an important focus for quality improvement.

**Methods, Intervention and Analysis:** The purpose of this quality improvement study was to describe quality indicators for palliative care, and discover when palliative care was introduced during the course of illness in patients with pancreatic cancer. Domains of palliative care identified by the National Consensus Project and the National Quality Framework, provided the framework for this study. A retrospective medical record review of patients with pancreatic cancer treated at the Dana-Farber Cancer Institute (DFCI) between January 2009 to December 2011 was conducted. Time variables relevant to disease course, and palliative care referrals were collected. Other key variables included: the reason for, and frequency and timing of, palliative care discussions.

**Findings and Interpretation:** Medical records from 150 DFCI patients were reviewed in which the mean length of care from first visit to last note (typically death) was 414 days (SD=347). 52 (35%) records included documentation of a palliative care discussion and the majority of those occurred at the time of disease progression. Prognosis discussions were documented after a mean 177 (SD=285) days and a palliative care consult was made on average at day 343 (SD=301). Of those consults, the large majority (82%) were requested for symptom management.

**Discussion and Implications:** Despite evidence and standards of care that support early palliative care discussions and subsequent referrals for palliative care consults, these findings suggest such events occurred late in the trajectory and care of patients with pancreatic cancer. Future quality work and training will address provider and health system variables that can promote discussions and consults.

## C2-0095

## FACTORS INFLUENCING PSYCHOLOGICAL DISTRESS IN PATIENTS WITH CANCER.

Debra Kantor, PhD, Molloy College, Rockville Centre, NY

**Podium Session 7:** Gaps in Care for the Oncology Patient

**Topic Significance and Study Purpose/Background/Rationale:** Psychological distress is a multifaceted, complex concept that has shown to interfere with the patient's ability to deal with the cancer diagnosis. The consequences of psychological distress includes a decrease in quality of life and decreased adherence to treatment regimens. This study explored the factors that influence psychological distress in patients with cancer. Influencing factors include medical treatments, personal concerns, family relationships, social support, spirituality,uncertainty and professional support. The Theory of Uncertainty, Chaos Theory, and review of the literature guided this study. Studies have shown that nurses do not routinely screen for psychological distress. Nurses involved in the care of oncology patients can utilize the results of this study to become actively involved in developing a collaborative plan of care to address the psychological distress of patients with cancer and ultimately improve their care.

**Methods, Intervention and Analysis:** Participants completed a questionnaire requesting demographic information, and three previously established valid and reliable measurement tools: Mishel's Uncertainty Scale, the Distress Thermometer, and the Distress Inventory- Cancer Version 2. The 150 participants were diagnosed with primary, non-metastatic cancer either in treatment or post treatment.

**Findings and Interpretation:** Correlational analysis revealed significant relationships between psychological distress and personal concerns, finances, and uncertainty (R square = -.63, .54, -.46 respectively). Psychological distress was primarily predicted by personal concerns total score (mean = -.47, pr = -.50, p = .000), Using hierarchical multiple regression, personal concerns increased the percentage of variance in psychological distress from 46% to 51%; suggesting that the influencing factors for psychological distress may be mediated by personal concerns. The descriptive statistics were reported for survey responses.

**Discussion and Implications:** Appropriate assessment and identification of psychological distress can promote improved patient care. The findings have implications for review of nursing curriculum, in-service education, plans of care for oncology patients, health care policy change, and the use of oncology nurse navigators. In addition, the findings are applicable to the care of oncological patients in both in-patient and out-patient settings. Ultimately, through their caring demeanor and advocacy role, nurses are frequently the positive influence in the patient's perception of their experience.

## C2-0063

## CLINICIAN/RESEARCHER COLLABORATION: EXPLORING CLINICAL QUESTIONS WITH A NOVEL RESEARCH METHOD.

Lanell Bellury, PhD, RN, AOCNS®, OCN®, Mercer University, Atlanta, GA; Jane Clark, PhD, RN, AOCN®, GNP-C, NA, Atlanta, GA

**Underwriting or Funding Source:** American Cancer Society, Doctoral Scholarship in Cancer Nursing DSCNR-07-220-03

**Podium Session 8:** A Fresh Look at Research Methods

**Topic Significance and Study Purpose/Background/Rationale:** Given the complexity of variables influencing nursing sensitive outcomes, the large amounts of data residing in healthcare systems, and the frequency of non-normal data distributions in nursing research studies, a need exists for novel methods to unravel data for oncology nurses in practice and research. The purpose of this presentation is to describe the application of Chi Square Automatic Interaction Detection (CHAID) to explore the complexity of variables that influence nursing sensitive outcomes and to demonstrate the usefulness of findings in oncology nursing practice and research. The main exemplar for this presentation comes from a nursing study of older adult breast cancer survivors which used CHAID to identify vulnerable subgroups of survivors. Additional exemplars from nursing and multidisciplinary research will be discussed.

**Methods, Intervention and Analysis:** CHAID is a data mining technique traditionally used with large data sets that aids

discovery of interactions among variables. CHAID is not limited by assumptions of linear relationships or normal distributions of data but explores interactions within the data and actually reveals subsets that potentially confound normal distributions and assumptions. The relationship between each predictor variable and the outcome variable is considered in an automated and stepwise forward fashion. Data are partitioned into mutually exclusive subgroups based on the significance level of each variable to the outcome. The program also merges subgroups based on level of significance and allows for adjustment of significance levels based on the Bonferroni method.

**Findings and Interpretation:** Interactions among complex variables complicate the interpretation of research findings, identification of targeted nursing intervention to achieve desired patient outcomes, and application of findings to practice. Interactions between variables are difficult to identify and interpret but may explain insignificant results in clinical practice and many nursing research studies. CHAID results are reported in a visual branching model and tabular output to enhance understanding. In the exemplar, CHAID analysis revealed vulnerable subgroups of older cancer survivors based on symptoms, comorbidities, and marital status.

**Discussion and Implications:** CHAID may allow researchers across disciplines to better understand complex phenomena of interest. Additionally, CHAID may enable clinicians to identify specific subgroups of patients that experience poor outcomes and need targeted interventions.

## C2-0146

## CAPTURING SYMPTOM BURDEN AND TREATMENT TOLERABILITY IN CANCER CLINICAL TRIALS: NCI'S PATIENT-REPORTED OUTCOMES VERSION OF THE COMMON TERMINOLOGY CRITERIA FOR ADVERSE EVENTS (PRO-CTCAE).

Sandra Mitchell, PhD, CRNP, AOCN®, National Cancer Institute, Rockville, MD; Kathleen Castro, RN, MS, AOCN®, National Cancer Institute, Rockville, MD; Diane St. Germain, RN, MS, National Cancer Institute, Rockville, MD; Andrea Denicoff, RN, MS, National Cancer Institute, Rockville, MD; Deborah Watkins-Bruner, RN, PhD, FAAN, Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA; Ann O'Mara, PhD, RN, FAAN, National Cancer Institute, Rockville, MD

**Underwriting or Funding Source:** NCI Contracts HHSN261201000043C and HHSN261201000063C

**Podium Session 8:** A Fresh Look at Research Methods

**Topic Significance and Study Purpose/Background/Rationale:** The standard lexicon for reporting adverse events in National Cancer Institute (NCI) sponsored clinical trials is the Common Terminology Criteria for Adverse Events (CTCAE). Currently, adverse events are reported by clinicians, yet evidence suggests that compared to patient-report, clinicians may underestimate the presence, severity, and onset of symptomatic treatment-emergent toxicity. The NCI Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events (PRO-CTCAE) (contracts HHSN261201000043C and HHSN261201000063C; PI: Ethan Basch) is a new patient-reported outcome (PRO) measurement system that elicits various attributes (symptom presence, frequency, severity and interference) of 78 symptomatic treatment toxicities that can be meaningfully reported from the patient perspective. PRO-CTCAE is intended to be complementary to the CTCAE, which is required for use in all NCI-sponsored trials.

**Methods, Intervention and Analysis:** PRO-CTCAE consists of an item library and a system for electronic survey administration and data capture. By directly incorporating patient self-report, PRO-CTCAE is designed to improve the accuracy, precision, and validity of adverse event reporting in cancer clinical trials. Simultaneously, it offers an efficient data collection routine that may yield new insights into the symptom experience and strengthen patient engagement in symptom self-management.

**Findings and Interpretation:** This presentation provides an overview of the structure and content of the PRO-CTCAE measurement system, and summarizes the qualitative and psychometric evidence supporting its analytic validity as a PRO measure of symptomatic treatment-related toxicity. The opportunities for oncology nurse researchers that may emerge as this new PRO is deployed in cancer clinical trials, and the measurement, interpretive, and implementation challenges that remain to be addressed through continued research are summarized.

**Discussion and Implications:** We conclude by highlighting future directions for PRO-CTCAE that may leverage the expertise of symptom researchers including: (i) priorities for continued instrument and analytic methods development; (ii) potential uses of PRO-CTCAE as an outcome measure in observational studies and supportive care intervention trials; and (iii) its potential as a platform upon which to test approaches to improve symptom management and care quality for patients participating in cancer clinical trials.

## C2-0233

## USING A TEAM APPROACH TO DEVELOP AND VALIDATE HEAD AND NECK EXTERNAL LYMPHEDEMA AND FIBROSIS GRADING CRITERIA.

Jie Deng, PhD, RN, OCN®, Vanderbilt University School of Nursing, Nashville, TN; Barbara A. Murphy, MD, Vanderbilt-Ingram Cancer Center, Nashville, TN; Nancy Wells, DNSc, RN, FAAN, Vanderbilt University School of Nursing, Nashville, TN; Mary S. Dietrich, PhD, Vanderbilt University School of Nursing, Nashville, TN; Sheila H. Ridner, PhD, RN, FAAN, Vanderbilt University School of Nursing, Nashville, TN

**Special Podium Session:** Addressing Clinical Issues With Collaborative Teamwork

**Identified Problem:** Patients with locally advanced head and neck cancer (HNC) are usually treated with aggressive multimodality regimens that often damage the lymphatic system and surrounding soft tissues, leaving patients at risk for secondary lymphedema and fibrosis. Our research team identified that approximately 75% of HNC patients develop lymphedema and/or fibrosis following cancer treatment. Higher levels of lymphedema and fibrosis are associated with substantial symptom burden, functional impairments, and decreased quality of life. However, little attention has been given to assessment of head and neck lymphedema and fibrosis. No validated grading criteria are available for clinicians to evaluate and document head and neck external lymphedema and fibrosis.

**Team Member Constituents:** An interdisciplinary team with expertise in HNC was involved in a two-phase research project. During phase I, there were ten HNC experts involved, including an oncology nurse practitioner, two oncology nursing researchers, a medical oncologist, two radiation oncologists, two surgical oncologists, three certified lymphedema therapists, and a speech and language pathologist. During phase II, three additional healthcare professionals contributed their expertise, including a neuroradiologist, an ultrasound imaging professor of radiology, and a diagnostic sonographer.

**Analysis of Problem Based on Current Evidence or Standards:** Due to use of different treatment regimens, some HNC patients may have fibrosis only and some patients may have typical lymphedema only. Many patients have both fibrosis and lymphedema simultaneously. That is, lymphedema and/or fibrosis may be found at different anatomical sites in the

head and neck region. Thus, it is clinically important to evaluate both types of soft tissue abnormalities simultaneously. In addition, given overlaps of symptoms and functional impacts from lymphedema and fibrosis, it is critical to document both lymphedema and fibrosis in clinical settings. Our previous work demonstrated that application of available grading criteria to assess external lymphedema and fibrosis yielded variable rates of lymphedema/fibrosis prevalence and severity in this population. Furthermore, existing criteria failed to capture important characteristics of this phenomenon.

**Team Goals/Objectives:** To develop and validate grading criteria for evaluating and documenting external lymphedema and fibrosis in patients with HNC.

**Team Work Process or Description:** We have conducted the two-phase research project to develop and validate grading criteria for assessment of HNC related external lymphedema and fibrosis using physical examination and imaging technology (ultrasound and CT). During phase I (development phase), ten HNC experts collaborated and provided insights for the content validity of the grading criteria via reviewing and revising proposed grading criteria. Then the revised grading criteria were pilot tested via direct physical examination of 30 HNC patients' external lymphedema and fibrosis status. Based on the results from the pilot test, the revised grading criteria were further modified by the expert panel. During phase II (validation phase), 55 HNC patients were recruited and completed the study. Three additional healthcare professionals contributed their expertise via data collection and imaging interpretation (i.e., ultrasound and CT images).

**Outcome:** Ongoing. In Phase I, the Head and Neck External Lymphedema and Fibrosis (HN-ELAF) Grading Criteria, including three components of lymphedema and fibrosis (type, site, and severity), were developed and demonstrated good content validity based on the interdisciplinary expert panel's feedback. The HN-ELAF Grading Criteria had an acceptable interrater reliability via the pilot test (i.e., 83% exact agreement on grading lymphedema severity, 100% within 1 grade, and kappa = 0.752, $p < .001$). In Phase II, the HN-ELAF Grading Criteria were used to evaluate lymphedema and fibrosis status in 55 HNC patients. The interrater and intrarater reliability of the Grading Criteria was examined by two certified oncology nurses (the data analyses are ongoing). The construct validity of the Grading Criteria was evaluated via a comparison with the CT images and ultrasound images interpreted by the study radiologists. The expert panel also evaluated the clinical utility of the Grading Criteria. The detailed outcome analyses for the phase II are ongoing.

**Evaluation and Revisions:** Ongoing. Once the HN-ELAF Grading Criteria are validated, they can be easily used by oncology nurses and other healthcare professionals during each office/clinic visit to evaluate head and neck external lymphedema and fibrosis during the routine collection of vital signs and weight. Thus, we plan to develop a follow-up/evaluation research project to 1) train oncology nurses and other healthcare professionals regarding how to use the HN-ELAF Grading Criteria; and 2) to evaluate whether they use the HN-ELAF Grading Criteria to document and follow patients' lymphedema and fibrosis status over the time, inform patients of critical knowledge about lymphedema and fibrosis (e.g., early signs/symptoms), and refer patients for rehabilitation treatment. The detailed evaluation project is ongoing.

## C2-0236

**NURSE-PATIENT INTERACTIONS AND COMMUNICATION SATISFACTION.** Sheila Stephens, DNP, RN, MBA, AOCN®, Cabell Huntington Hospital, Huntington, WV; Camilla Brammer, PhD, Marshall University, Huntington, WV; Cynthia Torppa, PhD, Marshall University, Huntington, WV; Margaret Wagnerowski, MSN, RN, CNS-BC, AOCNS®, Cabell Huntington Hospital/Edwards Comprehensive Cancer Center, Huntington, WV; Molly Sarver, BSN, RN, MBA, OCN®, Cabell Huntington Hospital/Edwards Comprehensive Cancer Center, Huntington, WV; Leann Ross, BSN, RN, OCN®, CCRP, Edwards Comprehensive Cancer Center, Huntington, WV; Lisa Muto, DNP, WHNP-BC, APNG, OCN®, Edwards Comprehensive Cancer Center, Huntington, WV

**Special Podium Session:** Addressing Clinical Issues With Collaborative Teamwork

**Identified Problem:** The focus on nurse-patient communication has never been greater. As noted by van Servellen, "improving the quality of communication is tantamount to improving patient outcomes." The communication that occurs during the discharge process is especially critical in facilitating the understanding of patient safety and continuity of care related to medication and treatment needs. This project sought to understand how nurses communicate during the discharge process and how this communication relates to satisfaction for the patient.

**Team Member Constituents**: To best understand the communication process, an Inter-Professional Team was developed with professors from a local university and nurses at a community hospital. Team membership was voluntary and consisted of three doctoral-prepared university professors from the Department of Communication, one nursing professor from the same university, the nurse manager from inpatient oncology, two nurses from the hospital education department, three research nurses from outpatient oncology, two DNP-prepared oncology nurses, and the oncology clinical nurse specialist. The diversity of the team assured expertise in areas of communication and nursing along with research and clinical practice. Staff nurses played an integral role in the project with their willingness to participate in the study and allow their discharge conversations with patients to be recorded and analyzed.

**Analysis of Problem Based on Current Evidence:** Nursing communication has been directly linked to patient safety, adverse events, patient engagement, and the likelihood that patients will follow medication and treatment recommendations. Nurse communication is also correlated with whether patients are likely to recommend the facility to friends, and the ratings of the hospital which are tied to funding and accreditation. Indeed, three of the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Survey questions deal directly with nursing communication. The fast pace and task-oriented nature of nursing, however, often provides little time for patient-centered communication which is known to encourage patient participation in decision-making which then enhances medication and treatment adherence.

**Team Goals and Objectives:** The primary goal of the team was to use their diverse experience to examine communication patterns used by staff nurses providing discharge information to patients and families compared to patient satisfaction reports during the post discharge phone surveys. Understanding the pattern of communication as it relates to satisfaction could lead to the development of best practice guidelines for nurse communication during patient discharge interactions. Secondary goals included research opportunities for the university professors and improved patient care and satisfaction for the community hospital.

**Team Process:** An invitation was extended by the community hospital nursing to the School of Nursing at the local university. Instead, however, the department chair suggested involvement with the Department of Communication. The Health Communication professors were anxious to become involved and provided their expertise in the development of the study and the analysis of the de-identified data. Team membership was voluntary and open to all interested nurses at the community hospital. Team meetings were arranged via email and Survey Monkey. A drop box was established to allow document exchange across the facilities via "cloud storage." A common Institutional Review Board provided human subject protection for the study. Nursing

education regarding the study was provided, consent was obtained, and the study implemented. Patients gave consent on the day of discharge, prior to the recorded conversation.

**Outcome:** Ongoing. The study has been completed although the analysis of the data is ongoing. A preliminary report was provided by the Health Communication professors at the first annual Evidence-Based Nursing Conference held jointed by the community hospital and School of Nursing. Early data indicated that patient satisfaction was overwhelmingly positive and nurses predominately used confirming/supportive messages in providing discharge information to patients and families. All discharge conversations transcribed in the early data set included two or more categories of supportive communication behaviors. Also, 97% of all nurse communication recorded was in the form of supportive messages. We await dissemination of the full data and comparison with reported patient communication satisfaction. Mutual respect and acknowledgement of diverse professional contributions guided the development of the inter-professional team and plans to continue collaboration in other aspects of health communication research and practice improvement are underway.

## C2-0101

## DNA REPAIR GENE VARIATION AND COGNITIVE FUNCTION IN POSTMENOPAUSAL WOMEN WITH EARLY-STAGE BREAST CANCER.

Theresa Timcheck-Koleck, BSN, RN, University of Pittsburgh, Pittsburgh, PA; Susan Sereika, PhD, University of Pittsburgh, Pittsburgh, PA; Catherine Bender, PhD, RN, FAAN, University of Pittsburgh, Pittsburgh, PA; Yvette Conley, PhD, University of Pittsburgh, Pittsburgh, PA

**Underwriting or Funding Source:** ONS Foundation NCI R01CA107408 T32NR009759

**Podium Session 9:** Genetic Factors Influencing Cancer Treatment Side Effects

**Topic Significance and Study Purpose/Background/Rationale:** Poorer pre-therapy cognitive function and decline in cognitive function with therapy has been well-documented in women with breast cancer; however, there is significant variability in this phenotype. Previous studies have implicated diminished DNA repair capabilities in poorer cognitive function. Furthermore, women with breast cancer have been found to have higher levels of DNA damage pre-therapy compared to healthy women, with the difference becoming more substantial after therapy. Therefore, the purpose of this study was to examine relationships between variation in DNA repair genes (PARP1, ERCC2, ERCC3, and ERCC5) and cognitive function in women with and receiving adjuvant therapy for breast cancer.

**Methods, Intervention and Analysis:** The sample (N=149) consisted of two cohorts of postmenopausal women with early stage breast cancer receiving chemotherapy plus anastrozole (n=39) or anastrozole alone (n=53) and a cohort of healthy, age- and education-matched controls (n=57). A battery of neuropsychological tests was used to evaluate cognitive function (i.e., attention, executive function, psychomotor speed, visuospatial ability, and visual and verbal learning/memory). Women receiving chemotherapy plus anastrozole were assessed before chemotherapy initiation, before anastrozole initiation, and six months post-anastrozole initiation. Women receiving anastrozole alone were assessed before anastrozole initiation and six and 12 months post-anastrozole initiation. Healthy controls were assessed at comparable time points. Subjects were genotyped for 23 functional/tagging polymorphisms of the PARP1, ERCC2, ERCC3, and ERCC5 genes using DNA extracted from blood or saliva. Regression analyses at time points and of changes from baseline were conducted using StataSE 12.

**Findings and Interpretation:** Every cognitive factor evaluated was significantly ($p<.05$) associated with at least two genes at one or more time points either by genotype main effects and/or genotype by treatment interaction effects. Significant ($p<.05$) main and/or interaction effects were also observed in change scores from baseline to the first and second follow-up assessments for two or more genes in each cognitive factor.

**Discussion and Implications:** Results from this study reveal that genetic variation in the DNA repair pathway plays an important role in cognitive function in women with breast cancer. In the future, genetic variation could offer healthcare providers a means of predicting which women are most at risk for cognitive decline and candidates for early/intensive interventions.

## C2-0107

## VARIABILITY OF GENES OF THE SEROTONIN PATHWAY AND POSTOPERATIVE NAUSEA AND VOMITING IN WOMEN WITH BREAST CANCER.

Susan Wesmiller, PhD, RN, University of Pittsburgh, Pittsburgh, PA; Yvette Conley, PhD, University of Pittsburgh, Pittsburgh, PA; Susan Sereika, PhD, University of Pittsburgh, Pittsburgh, PA; Richard Henker, PhD, CRNA, FAAN, University of Pittsburgh, Pittsburgh, PA; Catherine Bender, PhD, RN, FAAN, University of Pittsburgh, Pittsburgh, PA; Yvette Conley, PhD, University of Pittsburgh, Pittsburgh, PA

**Underwriting or Funding Source:** ONS Foundation NIH-NINR-T32NRO11972A

**Podium Session 9:** Genetic Factors Influencing Cancer Treatment Side Effects

**Topic Significance and Study Purpose/Background/Rationale:** Breast cancer surgery is related to significant postoperative nausea and vomiting (PONV), with 20-30% of women experiencing these symptoms. Serotonin is an important neurotransmitter involved in nausea and vomiting. The serotonin transport gene (SLC6A4), a critical element of regulation of the serotonin system, has been associated with nausea and vomiting, and there is evidence the serotonin receptor genes (HTR3A, HTR3B ) are associated with variability of response to antiemetic medications. The purpose of this study was to explore the association between variability of the genes of the serotonin pathway and PONV in women diagnosed with breast cancer. Additionally, the relationship of pain, anxiety and nausea were explored.

**Methods, Intervention and Analysis:** A prospective design was employed to measure PONV in 87 women following breast cancer surgery. Patients were recruited preoperatively. If present, severity of nausea was assessed on a 1-10 scale in the recovery room (PACU) and again 48 hours after surgery. Anxiety was measured with the POMS Tension-Anxiety short form. DNA was extracted from saliva samples obtained prior to discharge. Genetic data were identified using real time polymerase chain reaction (q-PCR). Data analysis included descriptive statistics, contingency table analysis with chi-square tests and binary logistic regression.

**Findings and Interpretation:** Of 87 women, 30 (34%) experienced PONV despite administration of ondansetron and dexamethasone as standard protocol during surgery. Women classified as having high serotonin transport activity were at greater risk for PONV. The wild type allele (AA) of the single nucleotide polymorphism (SNP) within 5-HT3A , 14396A>G ( rs1176713) showed a trend toward PONV (odds ratio 1.5, 95% CI=0.5-4.47, $p=0.23$). Higher anxiety and higher pain scores clustered with PONV, yet the PONV group consumed less opioids.

**Discussion and Implications:** Both SLC6A4 LA/LA and the wildtype AA genotype of the SNP 14396A>G represent higher serotonin activity, and both are associated with increased PONV in this sample. Understanding the mechanisms underlying PONV will lead to increased ability to predict who is at greatest risk for the problem and ultimately to the development of interventions to manage the problem.

## C2-0057

**INFLAMMATORY MARKERS AND SYMPTOM BURDEN IN PATIENTS WITH MULTIPLE MYELOMA UNDERGOING AUTOLOGOUS STEM CELL TRANSPLANTATION.** Loretta Williams, PhD, APRN, AOCN®, OCN®, The University of Texas MD Anderson Cancer Center, Houston, TX; Xin Shelley Wang, MD, MPH, The University of Texas MD Anderson Cancer Center, Houston, TX; Quiling Shi, MD, PhD, The University of Texas MD Anderson Cancer Center, Houston, TX; James M. Reuben, PhD, The University of Texas MD Anderson Cancer Center, Houston, TX; Nina Shah, MD, The University of Texas MD Anderson Cancer Center, Houston, TX; Valen E. Johnson, PhD, Texas A&M University, College Station, TX; Charles S. Cleeland, PhD, The University of Texas MD Anderson Cancer Center, Houston, TX

**Underwriting or Funding Source:** National Institutes of Health grant P01 CA124767, PI: Dr. Charles Cleeland

**Podium Session 9:** Genetic Factors Influencing Cancer Treatment Side Effects

**Topic Significance and Study Purpose/Background/Rationale:** Autologous hematopoietic stem cell transplantation (AuHSCT) is established for treatment of multiple myeloma (MM). Symptoms occurring with AuHSCT are often severe and poorly controlled. Symptom management is a primary oncology nursing role. A previous study reported IL-6-related multisymptom development around the white blood cell nadir of allogeneic HSCT. Our multipdisciplinary team, including a nurse scientist (LAW), conducted this study for the purpose of exploring the association between inflammatory markers and symptom severity during AuHSCT. By understanding mechanisms of symptom development, rational symptom management strategies can be identified.

**Methods, Intervention and Analysis:** Fifty patients with MM reported the severity of multiple symptoms using the validated MM module of the M. D. Anderson Symptom Inventory (MDASI-MM) twice weekly from mobilization through the first month after AuHSCT and then weekly for 2 months. Serum was collected and assayed by Luminex for interleukin (IL)-6, IL-10, tumor necrosis factor (TNF)-a, soluble TNF receptors 1 and 2 (sTNF-R1, sTNF-R2), IL-1 receptor antagonist (IL-1RA), vascular endothelial growth factor (VEGF), macrophage inflammatory protein-1 (MIP-1a), monocyte chemoattractant protein (MCP)-1 and C-reactive protein (CRP) twice weekly from mobilization through the first month after AuHSCT and 2 months later. Ordinal regression modeling was used to describe the relationship between inflammatory marker levels and symptom severity.

**Findings and Interpretation:** The most severe symptoms were fatigue, pain, disturbed sleep, drowsiness, and poor appetite. Symptoms worsened rapidly from conditioning therapy to WBC nadir. Over time, controlling for age, sex, and MM stage, increased serum IL-6 (P=.0007) and MCP-1 (P=.0005) were significantly associated with worsening of the most severe symptoms; MIP-1a (P=.005) and VEGF (P=.002) were inversely associated with these symptoms. Increased CRP was significantly associated with worsening pain (P=.01), fatigue (P=.007), and bone aches (P=.006). This observation, similar to IL-6-related multisymptom development around WBC nadir of allogeneic SCT, provides evidence of potential inflammation-induced behavioral changes.

**Discussion and Implications:** This study indicates a strong association between circulating inflammatory markers and severe symptoms in MM patients during AuHSCT. Nurses should be aware that severe symptoms during AuHSCT may be ameliorated by anti-inflammatory interventions. Our team plans to test interventions to confirm the role of inflammation in symptom development and identify effective mechanism-driven symptom management.

## C2-0065

**PATIENT AND CAREGIVER PERSPECTIVES OF SYMPTOM AND QUALITY OF LIFE EXPERIENCES DURING CANCER THERAPIES: IMPLICATIONS FOR E-HEALTH.** Mary Cooley, PhD, RN, FAAN, Dana-Farber Cancer Institute, Boston, MA; Janet Abrahm, MD, Dana-Farber Cancer Institute, Boston, MA; Ilana Braun, MD, Dana-Farber Cancer Institute, Boston, MA; Michael Rabin, MD, Dana-Farber Cancer Institute, Boston, MA; Manan Nayak, MA, Dana-Farber Cancer Institute, Boston, MA; Maribel Melendez, MBA, Dana-Farber Cancer Institute, Boston, MA; Donna Berry, PhD, RN, AOCN®, FAAN, Dana-Farber Cancer Institute, Boston, MA

**Underwriting or Funding Source:** Patient Centered Outcomes Research Institute

**Podium Session 10:** Exploring Patient and Caregiver Experiences

**Topic Significance and Study Purpose/Background/Rationale:** Providing adequate symptom and quality-of-life (SQL) management is a priority during treatment for cancer. The use of electronic technologies to enhance health care (E-health) is a timely and innovative way to enhance patient-engagement, facilitate patient-provider communication and improve outcomes. To date, most clinical settings have not established efficient methods to collect SQL data and integrate technologies into the flow of care. Patient-reported (PR) SQL information enhances the process and outcomes of care. The purpose of this study was to explore patient and caregiver preferences for providing and processing PRSQL information.

**Methods, Intervention and Analysis:** Eligible participants were > 18 years old, had a diagnosis of cancer, able to speak and read English and were seen at the Dana-Farber Cancer Institute. Adult caregivers were eligible when accompanying a patient participant. Data were collected through a series of focus groups (FG) using a one-time semi-structured interview guide and a demographics questionnaire. A moderator led each FG, which was audio-recorded and transcribed. Analysis was conducted using NVivo. Open and axial coding was completed; commonalities were grouped into nodes, large constructs among the nodes were identified and main messages were synthesized.

**Findings and Interpretation:** Forty-three participants (29 patients/14 caregivers), with a median age of 63, 58% female, 88% white and 63% with college education have participated in FGs. Preliminary analyses identified that patients perceived that their clinicians took SQL issues seriously, resulting in coordination-of-care and modification of treatment regimens. Patients struggled to participate in care and understand decisions surrounding treatment by bringing caregivers with them to their visits and by taking notes, often creating their own portable health records. Patients tracked weight, symptoms, and test results. These activities helped participants feel like "educated consumers", see trends in health and communicate better with clinicians. Patients and caregivers were able to manage at home when they knew what to expect, but they were uncertain when to contact clinicians when they experienced unexpected symptoms.

**Discussion and Implications:** E-Health technologies such as symptom tracking with decision support and access to medical records can provide patients/caregivers with informational support during treatment for cancer. These findings can be used to guide implementation of technologies into health care settings.

## C2-0096

**PSYCHOLOGICAL OUTCOMES FOR CAREGIVERS OF ADVANCED CANCER PATIENTS: DIFFERENCES BETWEEN GENDERS.** Sara Douglas, PhD, RN, Case Western Reserve

University, Cleveland, OH; Barbara J. Daly, PhD, RN, Case Western Reserve University, Cleveland, OH; Amy R. Lipson, PhD, Case Western Reserve University, Cleveland, OH

**Underwriting or Funding Source:** National Institute of Nursing Research grant NR018717

**Podium Session 10:** Exploring Patient and Caregiver Experiences

**Topic Significance and Study Purpose/Background/Rationale:** In the United States, more than 500,000 people die every year from cancer and deaths from cancer worldwide are anticipated to be 13 million by 2030. It has been well documented that caregivers of patients with cancer, especially those with advanced cancer, are significantly affected. To date, while untoward outcomes of caregiving have been well examined, very little work has examined outcomes by gender for caregivers of patients with advanced cancer.

**Methods, Intervention and Analysis:** Family caregivers of patients diagnosed with Stage III or IV lung, gastrointestinal, or gynecologic cancer were enrolled and followed for 15 months (or patient death). In addition to demographics, we administered the Profile of Mood States (POMS), Medical Outcomes Social Support (MOSS) scale, and the Caregiver Reaction Assessment (CRA). Data were collected at baseline, 3, 9, and 15 months.

**Findings and Interpretation:** 299 caregivers were enrolled; 67% of all caregivers were female. The majority were spouse (65%) of the patient, Caucasian (85%) and were, on average, 59 years of age. At study enrollment, there were significant gender differences for caregiver age, expected patient survival rate, emotional social support, caregiver lack of family support, depression, fatigue, and tension. Female caregivers scored worse on all variables compared to their male counterparts. When examining changes over time, overall social support (as well as emotional support) decreased over time (enrollment to 9 months later) (p=.006). While both groups showed decreased perceived social support over time, the pattern of change was different; males had a significant decrease in perceived social support between enrollment and 3 months later while females had a slow gradual decline over time. A similar pattern was seen for the overall POMS.

**Discussion and Implications:** Results of these analyses provide supporting evidence for prior work with cancer caregivers. The baseline and over-time differences regarding social support suggest that it is important to recognize the different patterns of experiences of males versus female caregivers of patients with advanced cancer. Clinical implications include assessing overall social support of all caregivers at the beginning of cancer care with attention to the possible need for additional support for male caregivers in the initial stages of treatment.

## C2-0122

## IMPLEMENTATION OF AN EVIDENCE-BASED PROGRAM OF CARE FOR PEOPLE WITH CANCER AND THEIR FAMILY CAREGIVERS IN A COMMUNITY SETTING.

Hyojin Yoon, RN, MSN, University of Michigan, Ann Arbor, MI; Bonnie Dockham, LMSW, Cancer Support Community, Ann Arbor, MI; Ann Schafenacker, RN, MSN, University of Michigan, Ann Arbor, MI; Laurel Northouse, PhD, RN, University of Michigan, Ann Arbor, MI

**Underwriting or Funding Source:** Rosalynn Carter Institute for Caregiving

**Podium Session 10:** Exploring Patient and Caregiver Experiences

**Topic Significance and Study Purpose/Background/Rationale:** Psycho-educational interventions that have been tested in randomized clinical trials (RCTs) to help patients and their family caregivers cope with cancer are seldom implemented in practice settings. Better collaboration is needed between academic nurse researchers and direct providers to implement evidence-based interventions in the community. The FOCUS Program is an efficacious psycho-educational program that was tested in three prior RCTs. To make the program available in the community, nurse researchers and social workers collaborated to implement a pilot study in a Cancer Support Community (CSC) in Michigan. The purpose of the study was to adapt and implement the evidence-based program in the community setting and determine the effects of the FOCUS Program on patients' and caregivers' quality of life (QOL) (primary outcome), perceived benefits of illness, dyadic support, communication, and self-efficacy (secondary outcomes).

**Methods, Intervention and Analysis:** A pre-post design (no control) was used to implement the program in a group format, consisting of 6 weekly, 2-hour sessions. The program was delivered by oncology social workers using a checklist protocol to maintain intervention fidelity. Eighty-six patient-caregiver dyads were referred to the study, 37 dyads enrolled (64%), and 34 dyads were retained (94%). The sample consisted primarily of patients with breast, gynecological, and lung cancer and their caregivers who were primarily spouse/partners. Patients and caregivers completed instruments separately pre-intervention (Time1) and immediately post-intervention (Time2). Instruments with established reliability and validity were administered: QOL (FACT-G), benefits of illness (Benefit of Illness Scale), dyadic support (Social Support Scale), communication (Lewis MIS Scale), and self-efficacy (Lewis CASE). Data were analyzed using descriptive statistics and Repeated Measures ANOVA with dyadic scores.

**Findings and Interpretation:** Significant changes (all ps<.05) from pre- to post-intervention were found for dyads emotional, functional, and total QOL (primary outcome), and self-efficacy (secondary outcome).

**Discussion and Implications:** Although the study was limited by the lack of a control group and a small sample, results suggest that the program can be implemented in the community to provide psychosocial care to cancer patients and caregivers with positive outcomes. A future implementation study will use a wait-list control group and multiple CSC sites to increase sample size.

# Abstracts Index by First Author

Abstracts are listed by first author, followed by type (poster [*ps*] or podium [*pd*]), abstract number, and page number.