

# Oncology Nursing Society 31st Annual Congress

## Podium and Poster Abstracts

For your convenience, all Podium and Poster Abstracts have been indexed according to subject (page 486) and first author (page 491).

The abstracts appear exactly as they were submitted and have not undergone editing or the *Oncology Nursing Forum* Editorial Board's review process. We have made every effort to be accurate.

If any errors or omissions have been made, please accept our apologies.

Abstracts that are not being presented do not appear.

### 1

**BUILDING A COLLABORATIVE NURSING PRACTICE TO PROMOTE PATIENT EDUCATION: AN INPATIENT AND OUTPATIENT PARTNERSHIP.** Kristin Negley, MS, RN, AOCNS, Sheryl Ness, MA, RN, Janine Kokal, MS, RN, Kelli Fee-Schroeder, BSN, RN, Jeanne Voll, MS, RN, Chris Hunter, AD, RN, and Kristi Klein, BSN, RN, Mayo Clinic, Rochester, MN.

Oncology nursing staff, in a large Midwestern medical facility, identified that patient education for oncology patients can be incomplete or duplicative between the inpatient & outpatient practices. Although excellent patient education is provided in both settings, the messages taught are unknown between practice areas without extensive chart review. Developing a formal partnership that promotes communication and consistent information and education helps to assure standards of care are congruent between these two settings.

The purpose of this project was to build a collaborative nursing practice between inpatient and outpatient practice settings that promotes a seamless, integrated process of meeting the educational needs of oncology patients and families, along with providing a unique opportunity to enhance oncology nurse's professional development.

Two inpatient nurses, partnered with oncology nurse educators, worked one day every two weeks for three months in an outpatient Cancer Education Center interacting with cancer patients and families, teaching classes, and working on specific projects. In addition to promoting available educational materials, the nurse educators focused on professional development skills such as learning theories and education competencies, formal presentations, teaching strategies, and individual and group patient education interactions. The inpatient nurses provided the unique clinical knowledge and expertise of bedside nursing to the outpatient education practice.

An extensive evaluation, utilizing Kirkpatrick's four levels of evaluation, was conducted to assess collaborative practice, staff development, and nursing job satisfaction. Evaluation was completed by written assessment and oral interviews pre and post project with nurse participants, nurse educators, and nurse managers (post only). Participants were also asked to keep anecdotal comments of patient encounters.

The evaluation showed positive results with themes including: increased collaboration and communication between practices; increased awareness and application of educational materials; enhancement of professional development skills; and the provision of seamless, integrated care. This collaboration project has started a direct communication process between the Cancer Education Program and the inpatient oncology nurses with future projects in process. Collaboration between nurses is important but infrequently documented in literature. This project, though small scale, resulted in nursing collaboration with high impact outcomes of positively affecting nursing knowledge and patient care.

### 2

**THE DEVELOPMENT OF A PATIENT EDUCATION CAREPATH: A PILOT PROJECT.** Marlana Mattson, RN, BSN, OCN®, University Hospitals of Cleveland Ireland Cancer Center, Cleveland, OH.

Background/Problem: Patient education regarding chemotherapy treatments, side effects and symptom management is a responsibility of

the oncology nurse. Oncology nurses consider patient education a high priority. This was described in the ONS Ambulatory Office Nurse Survey published in 2004. Oncology nurses are often faced with the challenge of integrating teaching into a busy schedule of patient care activities. Although oncology nurses consider patient education a high priority, chart reviews often reflect incomplete patient education or incomplete documentation. The lack of specific guidelines related to patient education has led to variable teaching practices among oncology nurses.

Purpose: The purpose of this project is to develop and implement an outcome oriented, multidisciplinary patient education carepath that ensures a consistent, high quality standard of patient education at an NCI-designated Comprehensive Cancer Center.

Intervention: A sub-group of the Ireland Cancer Center Patient Education Committee completed an assessment of the current patient education practices. Committee members outlined patient education topics relevant to general oncology treatments (i.e. nausea, infection, fatigue) and described the content necessary to provide comprehensive patient education. A carepath was designed with major treatment-related patient education topics organized in rows. Columns across the page represented periods of time. Individual blocks on the carepath list topics of patient education that should be discussed at a specific point in time. Each block includes bullet points of information to ensure consistent topic teaching among oncology RN staff. Group discussions, staff meetings, and poster presentations were used to introduce the patient education carepath project. The carepath was then introduced into three disease specific medical oncology practices for a six-week trial.

Evaluation: A retrospective chart audit to assess for documentation trends and completeness. All oncology RNs using the new patient education carepath will complete an evaluation tool to determine ease of use and the comprehensiveness of the carepath content.

Discussion: Implications for oncology nursing practice include consistent high quality patient education, as well as improved documentation. Integration of the patient education carepath into standard practice at the Ireland Cancer Center is the final project goal.

### 3

**A VIDEO IS WORTH A THOUSAND WORDS.** Ellen Carroll, BSN, RN, and Bazetta Blacklock-Schuber, BS, BSN, RN, National Institutes of Health, Bethesda, MD.

Patient education is the cornerstone of oncology care. Consistent and accurate patient teaching impacts patient outcomes, especially for diverse populations. Increasingly, patients are asked to take on more self-care responsibilities, such as central line care. With a rise in both non-English speakers and self-care responsibilities, new approaches to patient education are required. Moreover, oncology nurses at this institution identified a variation in the care of central lines by patients/caregivers.

To address inconsistencies and improve effectiveness in teaching line care, this project involved developing a video to enhance and complement written materials and patient instruction for both English/Spanish speakers.

Patient, caregivers and staff were informally surveyed on existing teaching methods related to line care. Using responses and hospital protocols,

bilingual materials were developed to address identified needs. Video topics were divided into segments including dressing change, line flushing, and routine and emergency care. Patients reviewed segments followed by one-on-one nursing instruction. Videos and written materials were given to patients to take home as a resource. Patients and caregivers were resurveyed to evaluate satisfaction and effectiveness of teaching methods.

Observation of line care by patients and caregivers showed consistent adherence to hospital protocols in both the English- and Spanish-speaking patients and increased confidence and understanding of line care skills were reported. In an informal survey, nurses reported increased satisfaction due to reduced time in teaching and improvement in outcomes.

Oncology nurses spend a great amount of time instructing patient related treatment and procedures. We now have consistency in line care teaching used for both English- and Spanish-speaking patients. Families have information available when away from the hospital to review as needed. Patient teaching is further enhanced by these products; nurses are able to use these products as a complement to teaching, not to replace one-on-one instruction. Clinical nurses have stated that this is a useful tool which opens communication with patients about specific topics. Necessary equipment, e.g., a DVD player, which may not be available to all patients, is a limitation of using this video as a take-home resource. Specific techniques for creating these videos will be discussed in this poster.

#### 4

**SKIN REACTIONS ASSOCIATED WITH ORAL REVLMID (LENALIDOMIDE) IN AL AMYLOIDOSIS (ALA); PATIENT TEACHING ENCOURAGING PROMPT REPORTING, AND CLINICAL ASSESSMENT AND MANAGEMENT OF SKIN REACTIONS CAN IMPACT PATIENT OUTCOMES.** Kathleen Finn, RNC, ANP, MN, AOCN®, Boston University Medical Center, Boston, MA; and Salli Fennessey, BS, CCRP, David Seldin, MD, Vaishali Sancharawala, MD, Anthony Shelton, BS, Sandy Allten, RN, OCN®, CCRP, and Carol Antonelli, CCRP, Boston Medical Center, Boston, MA.

Skin reactions associated with Revlimid® in ALA can be effectively treated with prompt management using over-the-counter (OTC) antihistamines and steroid creams. Oncology nurses involved with clinical studies have a unique opportunity to observe adverse events and a responsibility to share their observations to positively impact patient care.

We intend to describe skin reactions, using photographs, associated with Revlimid® and the effectiveness of our management.

Patients with ALA participated in our Phase II trial. Initial treatment began with Revlimid® 15-25mg/d for 21 days of a 28-day cycle. 28 patients completed at least one cycle. We observed Grade 1-3 rashes in 14 patients (50%). Of these, 12 developed a rash within the first 28 days. Rashes were typically maculopapular eruptions occurring frequently on the extremities, but also on face and trunk. Pruritis accompanied rash in 57% (8/14) of patients. Scalp itch occurred in 29% (8/28) of all patients. Duration of rash ranged from 1-22 days (median=8days). Patient teaching encouraged prompt reporting of skin reactions. Diphenhydramine (25-50mg q6hrs) and topical OTC steroids was used to treat rashes and scalp itch. Prophylactic diphenhydramine was used with rechallenging doses of Revlimid® and, in some cases, subsequent cycles. Rash grades and Revlimid® dose modifications are described in the table below. 10/12 patients continued Revlimid® with 2 discontinuing due to persistent Grade-3 rash.

Interventions for Non-desquamating rash using the NCI Common Terminology Criteria of Adverse Events (CTCAE) v3 are outlined below. Photographs will be utilized to demonstrate the rashes experienced.

\* Diphenhydramine given at first sign of rash/itch, topical steroids added if no improvement within 24hrs

Grade 1-2: 65%(9/14); \* and continue Revlimid®

Grade 3: 21%(3/21); \* and hold Revlimid®; if < Gr 2 by Day-21 start subsequent cycle at next lower dose

Persistent Grade 3; 14%(2/14); \* and discontinue Revlimid® permanently

Managing adverse events can be clinically challenging because of the delicate balance between maximizing therapy duration while minimizing severity of side effects. In our trial, effective patient teaching methods led to prompt recognition of skin reactions by patients and initiation of effective treatment, allowing most patients to continue Revlimid® therapy.

#### 5

**CLINICAL BENEFIT OF USING A COMPUTER-BASED RISK ASSESSMENT MODEL TO IDENTIFY PATIENTS AT RISK FOR CHEMOTHERAPY-INDUCED NEUTROPENIA.** Kevin Miller, RN, BSN, OCN®, CCRC, Mid-Ohio Oncology/Hematology, Inc., Westerville, OH.

Risk assessment for chemotherapy-induced neutropenia enables the identification of patients who would benefit from being given growth factor support starting in the first cycle of chemotherapy. A computer-based risk assessment tool can be integrated into the electronic medical records system, assisting in the clinical decision-making process. The consistent use of this tool in patients initiating chemotherapy could contribute to an improvement in the quality of care provided to patients.

To demonstrate the utility of a computer-based risk assessment for neutropenia in ensuring the consistent delivery of supportive care to high-risk patients initiating myelosuppressive chemotherapy regimens

The results of a review of 100 consecutive electronic medical records from before the implementation of the computerized risk assessment tool will be compared with the results of a review of 100 consecutive electronic medical records from after implementation. This IRB-approved protocol will gather data from 4 clinical sites. The study will be restricted to adult patients (>18 years) initiating myelosuppressive chemotherapy for neoadjuvant, adjuvant, or first-line metastatic breast cancer or for adjuvant or first-line metastatic non-small cell lung cancer who are not enrolled in chemotherapy clinical trials. Data will be collected for the first 2 cycles of chemotherapy.

The primary endpoint for this study will be the percentage of documented risk assessments conducted before and after the implementation of the tool. As secondary endpoints, the number of subjects who are given first-cycle growth factor support, the rates of febrile neutropenia, and the number of dose reductions and dose delays from before the tool's implementation will be compared to data collected after the tool's implementation. Data collection and analysis for this ongoing study will be completed in 2006. Preliminary data will be presented.

The use of electronic medical records technology can lead to standardized neutropenia risk assessments. This nurse-initiated project can lead to a more streamlined process for the identification of the risk for neutropenia in patients initiating myelosuppressive chemotherapy. Data collected in this pilot study may be used to design a larger study of the utility of the computerized neutropenia assessment tool in clinical practice.

#### 6

**TO COOL OR NOT TO COOL: WHAT'S THE EVIDENCE FOR EXTERNALLY COOLING FEBRILE PATIENTS?** Tina Mason, ARNP, MSN, AOCN®, and Lorna P. Baker, MSN, ARNP, CCRN, OCN®, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

In the oncology patient population, there are numerous etiologies for an elevated core temperature including infection, neoplasms, blood transfusion, side effects of medications (e.g., chemotherapy, growth factors, steroids), and radiation therapy. The Infectious Diseases Society of America (IDSA) algorithm outlines use of antimicrobial agents in neutropenic patients and differentiates between high and low risk patients. Use of external cooling, such as cooling blankets or ice packs, for fever management has traditionally been a nursing action. A question was posed to our Nursing Research Committee of whether benefits of externally cooling outweigh the risks. The evidence was identified and critically appraised.

The purpose of this abstract is to review the evidence-based literature on use of external cooling methods for febrile patients.

The history of the concept of fever and thermometry including the 37.0°C/98.6°F average temperature will be outlined. Fever, hyperthermia, and hyperpyrexia will be defined and their management listed. Research on use of external cooling methods will be summarized. Benefits versus harmful effects on the use of physical cooling will be illustrated. The IDSA algorithm will be reviewed.

Whether or not to treat fever and at what temperature to initiate therapy in critically ill patients remains unanswered. Although external cooling is a commonly used therapy, the use of cooling blankets or ice packs has limited research support. Evidence-based literature does not support the use of external cooling for fever management except in cases of hyperpyrexia in conjunction with antipyretic therapy such as acetaminophen. Harmful effects such as increased cardiovascular demands, increased oxygen consumption, and hyperventilation outweigh the benefits.

Accurate assessment for etiology of elevated core temperature leads to correct treatment. Collaboration with Infectious Disease Department and Pharmacy is essential for the selection of institutional antimicrobial therapy. It is imperative that evidence-based findings guide nursing actions. Disseminating these findings will provide the foundation for astute nursing care.

## 7

**CATCHING THE BUG WHILE IT IS ACTIVE.** Janelle Wood, RN, BSN, Judy Delgado, RN, BSN, and June Eilers, PhD, RN, BC, CS, Nebraska Medical Center, Omaha, NE.

Infections remain a leading cause of death in patients with cancer. Due to the nature of the disease and its treatment induced suppression of the immune system patients are at a significant risk for increased morbidity and mortality related to systemic infections. Rapid identification of causative organisms is essential for optimum patient outcomes. Discussion with staff and examination of blood culture data revealed inconsistencies in our practice

Our goal was to use evidence-based practice to standardize blood culture collections, thus improving yield for the initiation of appropriate antimicrobial therapy.

Our performance improvement team worked with the Oncology/Hematology and Infectious Disease physicians to review current blood culture policy and make recommendations for an evidence-based protocol. We provided education through speaking at unit meetings, sending e-mails, and placing posters and handouts on the units to inform staff regarding the new policy and its rationale. Compliance with the protocol was monitored based on weekly reports from the laboratory. Variations in practice were addressed on a regular basis.

Comparison of current data with that from an equivalent period of time prior to protocol change revealed excellent compliance with the newly established policy and procedure. There were 28 clinically useful blood culture reports during a three-month study period as compared to 15 during a prior three-month period. This is attributed to drawing cultures from multiple sites at the same time. In addition, the probable contamination rate during the study period was below the 3% ASM/CAP benchmark rate. This project demonstrates the ability of a unit-based performance project to promote improved standardization of care and compliance with policy and procedure for blood cultures.

Our data demonstrates how drawing a minimum set of two blood cultures from different sites improves yield and helps increase the number of clinically useful results. Nursing staff plays a pivotal role in the identification of patients requiring blood cultures and obtaining the necessary specimens in a timely accurate manner. The results of this project illustrate how implementation of evidence-based practice can serve to improve the quality of care delivered

## 8

**POSITIVE EFFECT OF EDUCATION ON THE PATIENTS' UNDERSTANDING OF FEBRILE NEUTROPENIA.** Jill Dickerson, RN, BSN, OCN®, and Susan Carson, RN, BSN, OCN®, Tyler Cancer Center, Tyler, CA.

Febrile neutropenia (FN) may be a sign of life-threatening infection in patients treated with myelosuppressive chemotherapy. Patients should, therefore, know the signs and symptoms of FN. Physicians at the Tyler Cancer Center were concerned that patients did not know the definition of fever; patients were either waiting too long to call in, allowing temperatures to rise significantly above the suggested 100.5°F, or calling in too soon despite an education program developed by nurses, which the staff considered effective.

To improve patient understanding of FN and the significance of absolute neutrophil count (ANC) by implementing new teaching methods and tools in a month-long patient education campaign

Nurses at the Tyler Cancer Center surveyed patients to assess their awareness of neutropenia and the point at which fever should be reported to the clinic. To increase patient understanding of the definition and consequences of FN, nurses conducted a campaign that included posters and revised literature and teaching sheets. Nurses also wore T-shirts that directed patients to call the clinic with temperatures >100.5°F. Approximately 5 to 6 weeks after initiating the campaign, nurses surveyed patients again.

The survey of 100 patients conducted before the campaign showed that 30% of patients did not understand what ANC meant and 41% did not

know the definition of fever, the temperature at which they should call the clinic. After the campaign was initiated, a survey of another 100 patients showed a substantial improvement in patient understanding of FN; only 6% did not know what ANC meant (an 80% improvement) and only 19% did not know the definition of fever (a 54% improvement).

Although patients are routinely educated by oncology nurses about the adverse effects of chemotherapy, they may not retain the information because 75% of what is heard is typically forgotten after 2 days. "Adult" learning techniques show that the more stimulating the learning activity is to the senses, the longer the information will be retained. By implementing learning techniques that incorporated materials that were heard, read, and seen, this nurse-driven campaign was able to more effectively teach patients about FN.

## 9

**PROTECTION OF PATIENT SAFETY AND IMPROVEMENT OF OUTCOMES THROUGH PRE-BISPHOSPHONATE DENTAL EVALUATIONS USING MULTIDISCIPLINARY COLLABORATION: PREVENTION OF OSTEONECROSIS OF THE JAW (ONJ).** Cynthia Waddington, RN, MSN, AOCN®, Christiana Care Health System, Newark, DE; and Constance Hill, APRN-BC, Medical Oncology Hematology Associates, Newark, DE.

The number of prostate, breast and lung cancer cases, all with a significant risk for boney metastasis continues to grow. Bisphosphonates are an important component of the management of boney metastasis. The use of these drugs significantly reduces skeletal-related events in patients with cancer. However, with long-term use and other risk factors, compromised healing within the jaw bone (ONJ) can result. This condition usually occurs after minor trauma such as dental procedures involving tooth extractions.

The purpose of this project is to establish a mechanism of communication and coordination that results in prevention of ONJ. Timely dental evaluations, appropriate interventions, and clearance by dental prior to initiation of therapy are key components of this process.

Quality nursing coordination and interventions have a positive impact on patient symptom experience and safety. Oncology referrals to a nurse coordinator initiates communication to and education of patients and dental staff and coordination of dental evaluations prior to starting bisphosphonates. Close follow up is maintained while interventions (thorough teeth cleaning, completion of necessary fillings, extractions of non-restorable teeth, and elimination of sepsis) are completed and clearance obtained. Continual communication regarding the status of these essential preventative measures is maintained with treating physician. Tools such as dental letter, supporting research, dental report form, and follow up form facilitate this process. Patients are then assessed for signs of osteonecrosis (oral cavity swelling, infection, pain, and exposed bone) every six months.

A data bank was developed to track number of referrals, risk factors, type of dental work completed, length of time to obtain dental clearance and results of follow up evaluations. Data is reviewed every six months. No new ONJ cases have been identified.

The nurse's role in patient education, supporting patient decision making, and coordination of pre-bisphosphonate dental evaluations is integral to patient safety and outcome management. Completion of thorough assessments and prompt recognition of complications during and post bisphosphonate therapy are also essential. The process used at this institution can be modified to facilitate efforts of prebisphosphonate dental evaluations at other institutions.

## 10

**BRINGING THE EVIDENCE TO PRACTICE: DEVELOPMENT OF GUIDELINES FOR MUCOSITIS PREVENTION AND MANAGEMENT IN PATIENTS RECEIVING CANCER THERAPIES.** Megan Dunne, RN, MA, APRN-BC, AOCN®, Joanne Kelvin, RN, MSN, AOCN®, Sue Derby, RN, MA, CGNP, ACHPN, Mary Montefusco, RN, MA, CGNP, ACHPN, Kristin Cawley, RN, MSN, OCN®, Jennifer Lucas, RN, BSN, and Jody Gilman, MS, RD, Memorial Sloan-Kettering Cancer Center, New York, NY.

Patients report mucositis as the most bothersome side effect of cancer therapies. It can result in pain, nutritional deficits, infection, and/or the need to alter the treatment plan. The management of oral complications of cancer therapies is integral to the role of the oncology nurse. A recent survey at this cancer center revealed discrepancies in practices and methods



for assessment, prevention, and management of mucositis in populations most at risk. A need for change was consequently identified.

This project was implemented to review current mucositis evidence and create standard guidelines for the institution. Clinical questions were framed to focus primarily on identification of an optimal tool for assessment, an oral care protocol, potential use of cryotherapy, and pain management strategies. We anticipate that implementation of the recommendations will ensure consistent assessment and management of mucositis and diminish the incidence and severity of it in our patients.

Nurses at this institution were surveyed with a six-item questionnaire. A multidisciplinary team including ambulatory and inpatient nurses, dental and nutrition professionals, and a pharmacist was established. A literature review was performed using CINAHL and MEDLINE databases to identify systematic reviews (including Cochrane), guidelines (including those from ONS and MASCC), and expert opinion. Evidence was critiqued based on methodologic rigor and feasibility and a summary of the evidence was compiled. Standards were created reflective of this evidence and a series of in-services are planned to educate staff.

Outcomes will be measured in a repeat survey of nursing practice and it is expected that consistency in the assessment, prevention, and management of mucositis will be improved.

New guidelines developed for this institution are based on current evidence. Assessment and documentation of mucositis will be based on CTCAE v3.0 criteria for both objective and functional assessment. Revisions in patient education materials will reflect the standards and improve compliance of patients to an oral care protocol. Four aspects of oral care were defined including cleaning, flossing, rinsing, and lip care. Patient preference was incorporated as much as possible. Cryotherapy will be initiated in appropriate circumstances. Clinician guidelines for management of mucositis pain will be available.

## 11

**PROCEDURAL PAIN IN ONCOLOGY PATIENTS: WHAT THE EVIDENCE REVEALS.** Ginna Deitrick, BSN, Hospital of the University of Pennsylvania, Philadelphia, PA; and Rosemary Polomano, PhD, RN, FAAN, University of Pennsylvania School of Nursing, Philadelphia, PA.

Advances in aggressive cancer therapies expose patients to repeated invasive diagnostic procedures to monitor treatment responses. Oncology patients frequently report pain associated with procedures such as bone marrow aspiration (BMA) and lumbar puncture (LP). By one person's account it is "the most difficult aspect of having cancer", often worse than the disease itself (Klein, 1992). Sensitivity to painful experiences and knowledge and timing of pain relieving interventions play a critical role in minimizing procedural pain and emotional distress.

An evidence-based review of the literature was conducted to examine the state of knowledge and gaps in research related to experiences with procedural pain from invasive procedures and therapeutic strategies to control pain and alleviate associated symptoms. Physiological mechanisms of tissue injury, psychological experiences, and evaluations of pharmacological and non-pharmacological approaches on patient outcomes

An exhaustive search in citation databases, MedLine, PubMed and CINAHL, identified publications on the current state of research and practice on pain and anxiety with painful invasive procedures. A detailed evidence table summarizes populations studied, research designs, outcomes and relevant findings that can be applied to clinical practice.

A critical appraisal of research on procedural pain shows more emphasis on pediatric oncology populations. Limited data are available on effective treatment approaches with adults. Pharmacological interventions using moderate and deep sedation with the use of opioids and sedating agents are acceptable, safe treatment options; however, concurrent use of complementary therapies such as distraction and hypnosis also holds considerable promise.

Apprehension and anxiety contribute to pain and distress for patients undergoing BMA and LPs in both pediatric and adult oncology populations. Results from investigations of pharmacological approaches and alternative and complementary therapies can be translated into practice-based protocols to effectively manage procedural pain and address patient safety concerns with sedation and analgesia. However, more research is needed to adequately describe these experiences and to document the benefits of both pharmacological and non-pharmacological interventions.

## 12

**AN EXPLORATION OF PAIN MANAGEMENT IN ACUTE CARE MEDICINE PATIENTS.** Sandra Vannice, RN, MSN, OCN®, AOCN®, and Catherine Dingley, PhD(c), RN, FNP, Denver Health Medical Center, Denver, CO.

Despite the availability of effective therapies, pain continues to be identified as a major concern in oncology. The Oncology Nursing Society has identified pain as a cancer symptom that is sensitive to nursing interventions. This project focused on pain management in adult patients at a 398 bed academic public safety net hospital. Nursing staff on two acute care medical floors expressed concern regarding pain management in their patient population that includes cancer among other diagnoses. Patient satisfaction survey results related to pain management underscored these concerns.

The purpose of this project was to describe nurses' knowledge and attitudes related to pain management, explore the pain management practices of physicians and nurses, and identify educational needs that could serve as a foundation for further provider interventions.

To determine pain management practices, 215 audits were conducted on charts during a three-week period in late 2004 using the Medical Record Pain Management Audit Tool (McCaffery, 1999). Nursing staff completed the Nurses' Knowledge and Attitudes Survey Regarding Pain (McCaffery & Ferrell, 1995) as well as the RN Needs Assessment: Pain Management Tool developed by the University of Wisconsin.

The data revealed a snapshot in time of pain management. Nurses were more likely to document pain assessments and to use the 0-10 pain rating scale than physicians. PRN opioids were ordered most frequently for pain management. Pain was assessed and documented prior to receiving medication less than 50% of time and pain level was assessed and documented after receiving medication only 25% of the time. Staff learning needs and significant gaps in nursing knowledge of pain management were identified. The project results revealed inconsistent documentation of pain assessment and pain scores by both nursing and physician staff.

This project revealed the need for interdisciplinary education related to appropriate pain assessment and management using both pharmacologic and nonpharmacologic interventions. Additionally, diffusion of evidence-based practices was limited, indicating a need for further provider interventions, exploring the establishment a pain champion model. Implementation of a collaborative multidisciplinary approach to pain management is anticipated to result in improved patient outcomes and satisfaction.

## 13

**SUCCESSFUL APPROACH IN DEVELOPING THE ROLE OF THE BREAST CARE COORDINATOR/NAVIGATOR IN COMMUNITY CANCER PROGRAMS: LEADERSHIP DEVELOPMENT PROJECT.** Elaine Sein, RN, BSN, OCN®, Fox Chase Cancer Center, Cheltenham, PA.

Breast cancer patients are the largest population of cancer patients seen in the community. Multidisciplinary Disease Management Programs are a goal of community based cancer programs in order to provide comprehensive cancer care and keep patients close to home. Breast Care Coordinators navigate patients from point of diagnosis through treatment to provide guidance with decision-making, education and support. Community Cancer Programs Breast Care Coordinators will have access to best practice models and disease management program development via education by a comprehensive cancer care network consulting group developed by Fox Chase Cancer Center.

The purpose of this project is to assist and support Breast Care Coordinators at varying levels of practice with role development through educational, clinical and operational updates. Secondly, to increase quality of patient care, improve patient satisfaction; increase patient volumes and institutional revenue by decreasing out-migration of patients to competing centers.

The Breast Care Coordinators actively participate in quarterly meetings to address the group's goals and objectives. These include: strategies for program growth, benchmarking against standards for evidence based practice and quality improvement, development of patient educational compendia, provide disease specific education updates and collaborate on multi-institutional nursing research projects.

This project has been successful as evidenced by comparing goals and objectives with accomplishments. This has been validated through: sharing successes and roadblocks as they established their position in the breast program, resources for breast cancer patients, fact finding with ONS

regarding possible certification credentials for Breast Care Coordinator, involvement in leadership roles within ONS Breast Care SIG, collaboration with Fox Chase Cancer Center on a benign breast cancer education study and plans for a regional breast cancer symposium targeting nurse coordinators /navigators for fall 2006. A Breast Care Coordinator tracking system was designed to capture patient satisfaction and quality improvement metrics and is currently being piloted.

The success of this project has broad implications for enhancing cancer care in the community. Community based cancer programs are using the Breast Care Coordinator model to develop other clinical coordinator roles for oncology disease management programs such as Gastroenterology, Lung and Gerontology.

## 14

**NURSE NAVIGATOR: CLINICAL LEADER IN PATIENT-CENTRIC STAT LUNG CANCER CLINIC.** Barbara Wilson, RN, MS, OCN®, AOCN®, CS, Rebecca Holder, RN, and Margaret Torres, RN, MN, OCN®, WellStar, Marietta, GA.

Review of 2004 Cancer Data Registry information revealed that our average length of time from diagnosis to treatment for patients with primary lung cancer was 53 days. Through analysis of 'usual course' for patients barriers to timely definitive diagnosis, accurate staging, discussion of treatment options and initiation of therapy were explored. Multiple appointments and communication were identified by patients and professionals as major contributors to delays.

Patients, physicians, and staff of departments expected to be involved in expediting this process embraced the concept of a patient-centric model. The Nurse Navigator position was established to ensure that patients had timely access to diagnostic imaging, laboratory testing, scheduling of medical and surgical procedures, clinical trials, reports, information, and resources.

The "STAT (Specialty Teams And Treatments)Cancer Clinic" was developed to create a positive sense of urgency and significantly reduce the time from diagnosis to treatment.

The team of clinical professionals and staff from supporting departments met weekly for six months to plan a clinic where patients with chest abnormalities (confirmed or suspicious for lung cancer) would be seen in one place by one physician specialist after another on the same day. At the end of the clinic day the team of specialists meet to discuss and arrive at a consensus regarding treatment options. The following day the treatment plan is communicated to the patient.

In the first four months, the average time from diagnosis to treatment went from 53 to 22.5 days, exceeding our target of 30 days. In addition to seeing physician specialists and Nurse Navigator, the 6-10 patients per Clinic may also see a dietitian, counselor and social worker.

Our STAT Clinic has fundamentally changed the way cancer care is delivered by bringing healthcare providers to the patient. The Nurse Navigator has been essential to the success of the STAT Clinic by establishing a relationship with patients as soon as they are referred and remaining a liaison between physicians, patient, offices, and departments. The results are immediate access for patients with efficient use of time and resources for everyone involved.

## 15

**IMPLEMENTING A FOUNDATION GRANT FOR A NURSE NAVIGATOR TO IMPROVE THE EXPERIENCE OF THE NEWLY DIAGNOSED BREAST CANCER PATIENT.** Mary Jean Houlahan, RN, BSN, BA, CCM, Jupiter Medical Center, Jupiter, FL.

Breast cancer navigation programs in non-profit institutions are often supported by foundation grants as part of their own missions. Nurses who are care coordinators impact the experience of newly diagnosed patients by explaining treatment options, ensuring rapid referrals to the treatment team, advocating for resources, and providing personalized care and emotional support.

Healthcare institutions are challenged to provide these programs in today's fiscal environment and are looking for opportunities to care for a variety of patient

populations by providing highly effective nursing interventions, which maximize use of dollars. Providing a nurse navigator program is a challenge in today's cost effective non-profit while providing patients with a very high standard of care. Cancer Committees often wrestle with the desire to provide this type of care on a limited budget.

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populations by providing highly effective nursing interventions, which maximize use of dollars. Providing a nurse navigator program is a challenge in today's cost effective non-profit while providing patients with a very high standard of care. Cancer Committees often wrestle with the desire to provide this type of care on a limited budget.

Our cancer center and wrote a nurse navigator grant proposal to the Susan B. Komen Breast Cancer Foundation, which was part of its mission. She conducts weekly breast cancer pre-treatment conferences, shortens the days from diagnosis to surgery, provides access to the multidisciplinary team and offers unconditional support to the patients.

Six-month reports are provided to the Komen Foundation detailing numbers of patients seen, services provided and measurable goals met. A yearly site visit allows Foundation representatives to have an intimate appreciation of the value of nursing interventions and patient and physician satisfaction. The program was the catalyst for the winning of four Emmys by a TV news affiliate.

Oncology nurse navigators are playing important roles in benefiting their institutions, supporting symbiotic relationships with advocacy foundations and improving patient outcomes. The medical community and the patients will have improved outcomes as the documented effectiveness of these initiatives becomes known. Our goals were met and our grant was doubled this year. Numbers of grant applications are increasing and institutions are asking for us to share our implementation model.

## 16

**A SURVEY OF PERCEPTIONS OF PATIENT SATISFACTION WITH PAIN CARE ON A GENERAL ONCOLOGY UNIT.** Suzanne Mcgettigan, MSN, CRNP, AOCN®, Mauri Sullivan, MSN, RN, CNA, Jose Espeleta, BS, RN, and Erin McMenamin, MSN, CRNP, Hospital of the University of Pennsylvania, Philadelphia, PA; and Rosemary Polomano, PhD, RN, FAAN, HUP and University of Pennsylvania School of Nursing, Philadelphia, PA.

Post-discharge patient satisfaction surveys generally include global indicators of pain management but these rarely provide specific information about patients' levels of pain and perceptions of pain care.

The purpose of this analysis was to examine relationships of pain and satisfaction outcomes and to identify predictors of satisfaction with pain care.

An outcomes research framework guided this investigation.

A multidisciplinary team of investigators adapted and tested a pre-existing postoperative pain satisfaction survey for general medicine and oncology service patients (N=223). Reliability and validity were established for an 18-item survey that generated 4 subscales confirmed by factor analysis. Six items measure dimensions of pain intensity. Seven questions address satisfaction with care; additional items for helpfulness of analgesics, wait times and overall pain control were included. Survey forms were distributed to patients on a general medical oncology unit oncology at the time of discharge over 9 months. Descriptive and correlation statistics, linear regression analyses, and nonparametric tests were used for data analyses.

The sample consisted of 88 medical oncology patients (mean age 52.8 ± 14.6 yrs; 49.3% males; median length of hospitalization = 5 days). Acceptable reliability was evident for all 4 subscales (Cronbach's alphas .6 to .84). Satisfaction with pain relief was highly correlated to satisfaction with RN/MD pain treatment ( $\rho = 0.67$ ,  $P < 0.001$ ) and concern (0.70,  $P < 0.001$ ). Higher "worst pain", and poorer perceptions of RN/MD concern and helpfulness of information predicted a "Tendency Toward Dissatisfaction" ( $P < 0.001$ ), while age and gender had no effect. Older age and less dissatisfaction with hospital care were associated with better "General Satisfaction" ( $P < 0.001$ ). Less "worst pain" and helpfulness of information in controlling pain were positively related to staff "Responsiveness" ( $P < 0.001$ ). No significant difference was observed for the "Pain Intensity" subscale between patients experiencing chronic cancer-related pain vs. acute pain. Routine assessments of pain and effectiveness of strategies to improve pain outcomes can provide useful information about pain experiences during hospitalization. Control of episodes of increased pain, staff expressions of concern about pain, and patient teaching on ways to control pain can make a difference in improving patients' perceptions of satisfaction with their pain care.

## 17

**A FIVE-YEAR FOLLOW-UP OF PATIENT SENSATIONS AFTER BREAST CANCER SURGERY.** Roberta Baron, RN, MSN, AOCN®, Jane Fey, MPH, Patrick Borgen, MD, and Kimberly Van Zee, MS, MD, Memorial Sloan-Kettering Cancer Center, New York, NY.

**Topic:** Breast cancer patients frequently experience postoperative sensations. This phenomenon remains poorly understood. Few studies have evaluated sensations in patients who had sentinel lymph node biopsy (SLNB) compared to axillary lymph node dissection (ALND). Our study evaluated sensations over 5 years with different surgical procedures.

**Purpose:** To evaluate prevalence, severity, and level of distress of sensations at one week (baseline), 3, 6, 12, 24 and 60 months after breast cancer surgery.

**Theoretical Framework:** This study is based on the University of California San Francisco Symptom Management Model in which careful symptom assessment is a prerequisite for effective symptom management.

**Methods:** Patients completed the Breast Sensation Assessment Scale (BSAS), an instrument developed by the investigators that contains 18 descriptors of breast/axilla sensations. Patients recorded each sensation as present or absent, and rated it on severity and level of distress. The BSAS demonstrated good reliability and validity in our previous studies. **Data Analysis:** Prevalence, severity and distress of sensations were compared using Fisher's Exact Test.

**Findings:** The BSAS was completed at all 6 time points by 187 patients. Surgery included SLNB+Breast Conservation (BCT) n=106 (57%), SLNB+Total Mastectomy (TM) n=27 (14%), ALND+BCT n=35 (19%), and ALND+TM n=19 (10%). Five years after surgery, 34% of SLNB patients still experienced twinges and 33% experienced tenderness. ALND patients experienced significantly more numbness (55%) and tightness (47%) compared to those who had SLNB ( $p<.01$ ). Of those patients reporting a sensation, less than 10% considered the sensation severe or distressing. Phantom breast/nipple sensations were experienced by 39% of the mastectomy population. Quality of life (QOL) information was completed by 131 patients, 89 who had SLNB and 42 who had ALND. Approximately 70% of patients in both groups reported that the sensations did not affect their QOL in any way. For those who experienced sensations that impacted their QOL, fear of recurrence was most frequently reported in both groups. **Implications:** While certain sensations remain prevalent at 5 years, they are generally not severe or distressing. This information will help nurses better understand patients' experiences so they can provide more accurate pre- and postoperative education and support.

## 18

**THE EFFECTS OF A COMBINED RECOVERY PROGRAM FOR POST-TREATMENT BREAST CANCER SURVIVORS.** Keri Hockett, PhD, ARNP, AOCN®, Sarasota Memorial Health Care System, Sarasota, FL.

The increased survival rate for breast cancer has allowed for the study of the physical and psychosocial symptoms that persist into the post-treatment period. Currently no standard of care exists for management of symptoms in the post-treatment period as part of the recovery process.

The aim of this research was to examine the effects of a 10-week comprehensive recovery program of twice weekly education, exercise, and support for breast cancer survivors and compare the results to a control group.

The conceptual framework is based on the Patient Active® concept of The Wellness Community, which posits that patients who actively participate in their cancer treatment and recovery may actually enhance their recovery.

This experimental study used a convenience sample of 17 women who completed treatment for breast cancer and participated in a structured breast cancer recovery program over a 10-week period. A control group of 13 survivors who also completed treatment and did not participate in a structured program were measured over a 10-week period. Data were collected on demographic characteristics, extent of disease, and type of treatment. The two subject groups were compared on their self-report responses of physical and social functioning and vitality as measured by the SF-36®, their level of distress from cancer related fatigue as measured by the Cancer Fatigue Related Distress Scale, and their degree of uncertainty as measured by the Mishel Uncertainty in Illness Scale. The subjects completed these self-reports at three time points.

Independent samples t-test and chi square test demonstrated that there were no significant demographic differences between the experimental and the control group, with the exception that the experimental group had significantly more chemotherapy. Two-way repeated measures ANOVA with between-groups analysis demonstrated significant differences over time in the experimental group on all measures, but no significant differences over time in the control group on any of the measures. There also was a significant interaction effect of time by group. **Conclusion:** The Return to Wellness program was effective in improving physical functioning, social functioning and vitality in women with breast cancer who completed the program. It was also effective in reducing uncertainty and distress associated with cancer related fatigue in this group of breast cancer survivors.

## 19

**ACTIVITIES OF DAILY LIVING FOR WOMEN WITH ADVANCED BREAST CANCER.** Susan Desanto-Madeya, DNSc, RN, University of Massachusetts-Boston, Boston, MA; and Susan Bauer-Wu, DNSc, RN, and Abigail Gross, BS, Phyllis F. Cantor Center, Dana-Farber Cancer Institute, Boston, MA.

The diagnosis and treatment of metastatic breast cancer creates multiple physical and psychological challenges. Despite the stressors, these women strive to balance ongoing personal and professional responsibilities while caring for themselves. Minimal research has described the extent to which metastatic breast cancer patients are able to carry out their day-to-day activities.

To describe, in detail, the daily activities of women with advanced breast cancer.

This study was guided by the core assumption of Feminist Theory that women's experiences are real and these experiences provide the foundation for knowledge.

Women with stage IV breast cancer (N=84) kept written activity logs over four consecutive days, which were originally collected as the control group in an expressive writing study. The logs were de-identified, transcribed, and saved electronically. Using content analysis, three members of the research team collectively identified codes describing specific daily activities performed. A detailed codebook was developed which defined and described inclusion and exclusion criteria, provided an example of each code, and was used to guide the analysis. The researchers analyzed and coded the same transcripts until no new codes were identified. Remaining transcripts were divided among the team and individually coded by hand. Randomly selected transcripts were reviewed and validated with the team to ensure reliability. After hand analyses, all transcripts and codes were imported into NVivo software program. Electronic coding mirrored hand coding. Subsequent analyses identified broader themes based on participants' attributes that reveal the reality of everyday life for women with advanced breast cancer.

Twenty-eight codes were identified. The results demonstrate that advanced breast cancer patients are living very full, active lives despite numerous symptoms and cancer treatments. This serves as the foundation for the development of interventions to enhance daily functioning. It is important for oncology nurses to counsel women with advanced cancer regarding activity pacing and self-care activities.

## 20

**AN ELECTRONIC ENVIRONMENT FOR CONDUCTING QUALITY OF LIFE RESEARCH: THE FERTILITY AND BREAST CANCER PROJECT.** Karen Hassey Dow, PhD, RN, FAAN, University of Central Florida, Orlando, FL; and Patrick McNees, PhD, Applied Health Science, Inc., Orlando FL.

The impact of cancer treatment on fertility is a major distress among young breast cancer survivors. To assist young women with breast cancer to understand the factors and issues affecting fertility and identify reproductive options, we developed the Fertility and Cancer Project, a novel psychoeducational and support research project conducted entirely in an electronic environment.

The purpose of this paper is: (a) illustrate the components of the Fertility and Cancer Project; (b) discuss unique partnerships with breast cancer advocates, and technological and research security experts; (c) report site activity and participant usage patterns; and (d) articulate the challenges in the deployment of a comprehensive Internet-based research project for young women with breast cancer.

The conceptual model was based on principles of patient education and quality of life. Furthermore, we developed a conceptual algorithmic



scheme to guide the development process and devised specific strategies and tactics for addressing issues such as confidentiality, privacy, and remote data access.

The Fertility and Cancer Project consists of educational and materials and support resources accessed via the Internet. Education focused on normal reproductive function, personal and cancer treatment factors affecting fertility, assisted reproductive technologies, infertility information, and alternative parenting options. Support services included access to a bulletin board discussion and links to breast cancer and infertility resources. Subject recruitment, screening, informed consent, study enrollment, QOL baseline assessment, education and support delivery, data management, analysis, and participant communication were addressed. We used an iterative rapid prototyping approach for user interface aspects of the site design. Electronic announcements were made through cancer support groups. Site activity and participant usage patterns were monitored. Descriptive statistics were used for data analysis.

During the first 12 months, there were nearly 96,000 hits from over 30 countries with an average of 7.5 minutes per session. Sixty-nine subjects representing 8 countries including the United States enrolled in the project. Once registered, participants averaged 25 minutes per visit. Research conducted in an electronic environment requires strong collaboration with web designers, database specialists, security experts, and advocacy groups. While considerable collaboration is required, quality of life research can be facilitated through an electronic environment.

## 21

**AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE: IMPROVING MEDICATION SAFETY THROUGH A COLLABORATIVE NURSE-PHARMACY COMMITTEE.** Michelle Grover, MSN, MBA, RN, OCN®, Johns Hopkins Hospital, Baltimore, MD.

Patient safety is at the forefront of everything we do as Oncology nurses. It is especially relevant due to the high risk nature of the medications in our practice. Improving communication and multidisciplinary teamwork is an effective strategy to empower bedside Oncology nurses to enhance medication and patient safety.

In keeping with the Joint Commission on Accreditation of Healthcare Organization's 2005 National Patient Safety Goal to "improve the effectiveness of communication among caregivers", the existence of a collaborative Nurse-Pharmacy committee is an important component in building the culture of safety. Recognizing that collaboration and communication contribute to patient safety, this NCI designated Comprehensive Cancer Center created a multidisciplinary committee consisting of nurses and pharmacists to address issues surrounding medication safety.

The Nurse-Pharmacy committee is composed of staff nurses and unit-based pharmacists to ensure that the committee functions as a "grass roots" entity and has the authority to enact changes in the medication delivery process. Co-chaired by a nurse and a pharmacist, medication safety issues are addressed in its bimonthly meetings. Agenda items include: problems with nursing and pharmacy communication and collaboration; adverse drug events; medication QI initiatives; prescribing, dispensing and administration issues; and examination of medication policies, procedures and processes. Agenda items are derived from hospital-based initiatives, departmental QI initiatives and from staff initiated, unit-based issues.

Committee developed initiatives; recommendations and changes in practice are evaluated in an on-going basis. A four-step performance improvement process, "Plan-Do-Study-Act", is utilized. Feedback from all stakeholders regarding committee recommended changes is included in the evaluation process.

Medication use in the Oncology setting, in particular research protocols and chemotherapy regimens, will continue to grow in complexity. Our Nurse-Pharmacy committee utilizes a systems-approach strategy to optimize safe medication delivery and administration, and improve collaboration between Oncology nurses and pharmacists. Providing the opportunity to Oncology nurses to participate in a multidisciplinary committee improves quality of care, involves nurses in QI/PI initiatives, fosters autonomy and interdisciplinary collegiality, and supports professional development, all characteristics of Magnet nurses. Effective communication and teamwork can be the key to success in improving patient safety.

## 22

**PREVENTING INTRATHECAL ADMINISTRATION OF VINCRISTINE: AN INSTITUTIONAL RESPONSE TO THE SENTINEL EVENT ALERT ISSUED BY THE JOINT COMMISSION ON ACCREDITATION OF HEALTHCARE ORGANIZATIONS.** Maria Slezak, RN, BSN, OCN®, University of California, San Diego (UCSD), Medical Center–Moores UCSD Cancer Center, San Diego, CA; Marlon Saria, MSN, RN, AOCN®, UCSD Medical Center, San Diego, CA; and Susan Wilson, PharmD, UCSD Medical Center–Moores UCSD Cancer Center, San Diego, CA.

Topic: This quality improvement project describes the response of a university-affiliated healthcare system operating two medical centers and a newly-opened National Cancer Institute (NCI) designated Cancer Center to the sentinel event alert issued by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) on prevention of intrathecal administration of vincristine.

Problem/Purpose: Inadvertent intrathecal administration of vincristine is a fatal yet very preventable error. Despite specific requirements for labeling and a rigid dispensing standard imposed by the United States Pharmacopeia (USP), these errors continue to occur. The goal of this quality improvement project is to prevent such error from occurring at our institution

Interventions: The medical center policy "Antineoplastic drugs: Staff education, cytotoxic drug handling precautions and administration" was revised to include JCAHO recommendations on the administration of intravenous vincristine and intrathecal antineoplastic medications. Vincristine will no longer be dispensed in a 3mL syringe to preclude intrathecal administration and will only be delivered to the unit upon receiving a confirmation from nursing that intrathecal administration of another antineoplastic drug is not imminent or has been completed. In order to address the often omitted documentation of intrathecal medication verification, we have also developed a multidisciplinary check off sheet that will accompany the intrathecal medication from Pharmacy, to the nursing unit, and eventually to the patient's bedside.

Interpretation / Evaluation: Mandate from the Patient Safety Committee to address the sentinel event alert on preventing inadvertent intrathecal administration of vincristine issued by a regulatory agency (JCAHO) and findings from mock surveys conducted on the various oncology units outlined the need for a better documentation of intrathecal drug administration. The proposed changes have been approved by the various committees at our institution and have preserved our zero error rate for inadvertent intrathecal administration of vincristine.

## 23

**CHEMOTHERAPY SPIKING/TUBING PREPARATION PROCEDURES: WHAT'S SAFE/WHAT'S NOT.** Rosanne Arlington, RN, MSN, CNS, OCN®, ONC, Susan Spivey, Lucy Moyer, BS, RPh, and Mildred Toth, RN, MS, OCN®, AOCN®, CLNC, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Significance and Background: Concern for nurses' and other healthcare professionals' safety, and the need to administer some chemotherapeutic agents based on pharmacokinetics led to review of processes used to prime IV tubing to assure safe, effective, and economically efficient techniques.

Purposes of this project included to determine if the conventional spiking and priming technique potentially allow drugs escape into the environment; evaluate if a closed system, PhaSeal, prevented release of hazardous drugs into the environment; and determine the safest method of priming tubing when dosing is based on pharmacokinetics.

A 0.05% solution of Fluorescein was prepared in 250 ml bag of normal saline. UV light was used to visualize fluorescein leaks and spills.

Five oncology nurses each primed IV tubings with normal saline and then spiked 10 bags having a PhaSeal port and 10 bags without the PhaSeal port (a total of 50 bags with PhaSeal port and 50 bags without PhaSeal port were spiked.)

To determine the safest method to prime tubing for pharmacokinetic administration, a nurse and pharmacist primed 50 IV tubings to within ¼ inch of the end of the tubing. Twenty-five tubings were capped with hydrophobic filters and 25 with standard IV caps. Then filters/caps were removed, and tubings were attached to our usual IV port and inspected.

Swipe tests of the chemo preparation and administration areas were completed on multiple units.

Following standard spiking of 50 bags with a PhaSeal port and 50 bags without a PhaSeal port with tubing primed with normal saline, no external contamination with fluorescein was identified.

Following priming of tubing for pharmacokinetic administration, the tubings primed using a hydrophobic filter, had fluid into the very end and contaminated gloves/prep pad/IV ports. Tubings primed using a cap did not contaminate the environment.

We are awaiting results from swipe tests of our current environment.

Information gained from this project, can help oncology nurses maintain a safe, effective, efficient environment for chemotherapy administration (including pharmacokinetic administration), provide information to industry to improve safeguards, and serve as a stimulus for nursing research.

## 24

**ADMINISTERING CHEMOTHERAPY IN NON-ONCOLOGY SETTINGS: A DIFFERENT APPROACH.** Sheree Dunn, RN, OCN®, and Lucy Mauney, RN, BSN, OCN®, Duke University Health System, Durham, NC.

Nurses responsible for administering chemotherapy are required to have specialized expertise and clinical competency to deliver treatment appropriately. As new indications for chemotherapy agents and targeted therapies are prescribed for non-oncology diagnoses, challenges arise when these agents are administered among units other than those designated for oncology patients. This presents a dilemma because of competencies required for chemotherapy administration. Prior to implementation of this model, off-service chemotherapy was delivered by infusion nurses.

It was determined that nurses on a 31-bed inpatient hematology/oncology unit are most competent to deliver chemotherapy due to the high volume of chemotherapy administered on a daily basis. Hospital administration implemented a model focusing on utilizing the expertise of chemotherapy-competent nurses to efficiently administer chemotherapy to off-service patients. This presentation outlines the resources used to effectively implement this hospital-wide system.

The hematology/oncology unit is notified of all patients requiring chemotherapy. Upon notification, a designated nurse is assigned to administer treatment. This consists of carrying out the following responsibilities: reviewing physician's orders and arranging a chemotherapy administration time with the care nurse, notifying the physician or pharmacy of any discrepancies within the orders and holding therapy until discrepancies are resolved; double-checking chemotherapy orders with another chemotherapy-competent nurse; discussing agent-specific guidelines, premedications, lab values and other pertinent monitoring required for administration. Additionally, the designated nurse is responsible for ensuring appropriate IV access for therapy. Once treatment is initiated by chemotherapy-competent nurses, education is provided to the patient and care nurse regarding adverse effects.

Prior to initiation of this model in 4/05, there were inconsistencies related to the administration of chemotherapy among off-service patients. Over the following 6 months, 204 agents were given. Because chemotherapy was administered by a select group of nurses, the hospital system received feedback from nurses on other units reflecting increased staff and patient satisfaction.

This model had a significant impact on timely administration of chemotherapy as well as providing consistent resources for staff nurses hospital-wide. Other oncology nurses can use this model to effectively increase consistency among chemotherapy administration practices thereby increasing patient and staff satisfaction.

## 25

**FROM "IT" TO "I": ACCLIMATION IN THE FIRST DAYS FOLLOWING BREAST CANCER DIAGNOSIS.** Robin Lally, PhD(c), RN, AOCN®, CNS, and Marsha Lewis, PhD, RN, University of Minnesota School of Nursing, Minneapolis, MN.

Over 200,000 women are diagnosed with breast cancer annually in the U.S. Multiple decisions and stress typically characterize the post-diagnosis period. Long-term survivorship (e.g. adjustment, satisfaction, and quality of life) may be adversely affected if women's needs are unmet at that time. Retrospective, quantitative research has focused on meeting specific decision-making needs during this period but not on the context in which these needs arise, nor on determining the appropriate focus of interventions.

The purpose of this study was to explore and conceptualize the experience of women during the immediate post-breast cancer diagnosis

period, developing a grounded theory explaining the context and behavior of patients and providing focus for interventions to mitigate potential long-term effects.

The core category of this grounded theory relates to actions toward self and thus symbolic interactionism has been chosen.

A grounded theory study was conducted in a Midwestern, U.S. multi-disciplinary breast center. Eighteen women, ages 37 to 87 years, and a mean of 12 days post-diagnosis of first breast cancer, but in the pre-operative period, formed the sample. Unstructured to semi-structured interviews ranged from 25 to 90 minutes. Observations and informal interviews with staff were conducted within the breast center. Survivor artwork and a published survivor's diary were also used in theory development. Theoretical sampling, constant comparative analysis, and memoing were used to identify a core category, achieve data saturation, and develop the theory.

A three stage, multi-phase, process of "acclimation" emerged as a basic social psychological process used by women to resolve the post-diagnosis problem of maintaining self-integrity. Women moved from Disembodiment (seeing cancer as "It" and distancing from it, themselves, and others), to Reconstruction (mental work of meaning-making, introspecting, cocooning, anticipating, and taking-it-on) and Incorporation ("I have breast cancer") at differing rates dependent on what they brought to the process. All demonstrated varying degrees of Incorporation, just day's post-diagnosis. This theory identifies a primary concern of women with breast cancer during the post-diagnosis period, and a resolution process on which nursing intervention and future research may focus, in order to support successful survivorship.

Funding provided by: ONS, MNRS, and U of MN

## 26

**GENDER DIFFERENCES IN SMOKING RELAPSE.** Mary E. Cooley, PhD, RN, and Emily Blood, MS, Dana-Farber Cancer Institute, Boston, MA; and Randall Hoskinson, MA, and Arthur Garvey, PhD, Harvard School of Dental Medicine, Boston, MA.

As a result of increased tobacco use among US women, there has been an unprecedented rise in the incidence and mortality associated with lung cancer. In order to eliminate tobacco-related illnesses, effective smoking cessation interventions are needed. Although the number of studies examining gender differences has increased over recent years, there are still significant gaps in the knowledge related to smoking behavior among men and women.

Consistent with ONS research priorities, the purposes of this secondary analysis were to examine whether pre-cessation and post-quit-day-1 (D1) biopsychosocial (NRT dose, withdrawal, stress, mood, coping, social support, partner smoking), and behavioral (self-efficacy, motivation) factors associated with smoking relapse (SR) differed among men and women, and to examine potential differences in self-reported reasons for SR.

The biobehavioral model of nicotine addiction was used to guide this study.

Data were collected from 608 participants using standardized questionnaires. Salivary cotinine was used to confirm smoking abstinence. Descriptive statistics, chi-square, and time-to-event analysis were performed.

Pre-cessation factors associated with time-to-relapse (TTR) among men were NRT dose, higher social stress and partner smoking, whereas women with NRT dose, higher financial stress and higher self-efficacy in positive affect situations were at greater risk for SR. In a combined model, only this effect of positive affect self-efficacy on TTR appeared to be marginally significantly different in men and women. The D1 factors associated with TTR in men were NRT dose and higher self-efficacy in negative affect situations. For women, dose, lower motivation, lower negative-affect, and higher self-efficacy in habitual-craving situations were associated with greater SR risk. In a combined model, the effects of self-efficacy in negative-affect and habitual-craving situations on TTR appeared to be significantly different in men and women. Analysis of self-reported reasons for early SR showed 24% of women and 37% of men identified smoking out of habit as the reason for SR. Another 24% of women identified negative affect as the reason for SR as compared to 14% of men. Results suggest that factors associated with SR may differ among men and women. Development and testing of gender-specific



interventions are needed to increase long-term abstinence rates among women.

Funding Sources: National Cancer Institute

## 27

**PREVENTION OF FALLS AND OSTEOPOROTIC FRACTURES IN POSTMENOPAUSAL BREAST CANCER SURVIVORS.** Nancy Waltman, PhD, APRN, University of Nebraska College of Nursing, Lincoln, NE; Gloria Gross, RN, PhD, University of Nebraska College of Nursing, Scottsbluff, NE; Ada Lindsey, RN, PhD, FAAN, Retired, AL; Carol Ott, RN, PhD, OCN®, University of Nebraska College of Nursing, Kearney, NE; and Janice Twiss, PhD, APRN, and Kris Berg, EdD, University of Nebraska at Omaha, Omaha, NE.

**Significance and Background:** Major consequences of osteoporosis are fractures caused by low bone mineral density (BMD) and by falls. Breast cancer survivors (BCS) are at risk for osteoporosis because cancer treatments can cause early-onset menopause and early bone loss (low BMD). To prevent fractures in BCS, interventions need to address prevention of falls as well as improvement in BMD.

**Purpose:** This study compared effectiveness of a two treatment group intervention (G1, G2) in preventing falls and fractures in 174 postmenopausal BCS.

**Methods and Analysis:** Postmenopausal women with history of stage 0, I, or II breast cancer and with low BMD were randomly assigned to one of two treatment groups (G1 or G2). Both groups received risedronate, calcium, and vitamin D for 24 months. G1 subjects also participated in strength/weight training exercises (SWTE). Outcomes at 6 and/or 12 month intervals included muscle strength (Biodex), dynamic balance (backward tandem walk), falls, fractures, and BMD, and differences between groups were analyzed using ANCOVA.

**Theoretical Framework:** Facilitative strategies based on Bandura's (1997) Self-Efficacy Theory promoted adherence to intervention components in both G1 and G2 groups.

**Findings and Implications:** Findings are reported for first 12 months in an ongoing 24 month intervention, and BMD results are not included. Mean age of G1 (SWTE) group women ( $n = 81$ ) was 58.7 (+7.4) years compared to 58.5 (+7.6) years in G2 group ( $n = 93$ ). Mean time since menopause or HRT for G1 group was 6.8 (+6.5) years compared to 7.8 (+7.6) years in G2 group. Women in the G1 group had significantly improved balance [ $F(2,171) = 2.38, p = .007$ ] and muscle strength for hip flexion [ $F(2,171) = 3.08, p = .04$ ]. Differences in knee flexion [ $F(2,171) = 2.38, p = .09$ ] and knee extension [ $F(2,171) = 2.34, p = .09$ ] approached significance. Twenty-six of 81 G1 subjects reported a total of 40 falls and 32 of 93 G2 subjects reported 58 falls. Twenty percent of G2 subjects had multiple falls compared to less than 7% of G1 subjects ( $p = .01$ ). G1 subjects had one fracture (right wrist) and G2 subjects had two fractures (left ankle and patella). Implications will be discussed at the presentation.

## 28

**TURNING DISCHARGE DEFICIENCIES INTO THROUGHPUT EFFICIENCY.** Dawn Gubanc, MSN, RN, CNAA, BC, Cleveland Clinic Foundation, Cleveland, OH.

Patient throughput is an area of great interest to organizations of all sizes. This poster presentation will review the baseline data of an academic, tertiary care medical center in the Midwestern United States related to discharges accomplished before 12 noon daily.

The poster presentation will then identify strategies used to assess system challenges and will discuss the practice changes implemented to achieve improved outcomes

Interventions included the creation of a discharge planning tool, role clarification, S.W.O.T. analysis, and ultimately the creation of a throughput manager at the unit level.

As a result of this project, we have seen a change in the percentage of oncology/palliative medicine patients discharged before noon. Baseline data before intervention was 5% of our patients discharged before noon. Post implementation of the throughput manager yields 50% of our patients discharged before noon.

Being able to impact patient throughput so significantly has a positive impact on patient flow through out the organization. It allows us to ultimately admit our patients earlier in the day, discharge them earlier in the day. This additionally, impacts patient satisfaction as well as system effectiveness and efficiency

## 29

**PRECISE CODING AND BILLING FOR THE ONCOLOGY NURSE.** Rosalee Miller, RN, OCN®, and Ron Digiaimo, Revenue Cycle Inc., Austin, TX.

With the rising cost of health care, reimbursement cuts, and ongoing changes of Medicare, nurses are finding their roles as caregivers changing. They now have to become frontline experts in areas of coding and billing. This workshop will be designed to give an overview of proper CPT, HCPCS, and ICD-9 coding, and the affects and outcomes of improper coding.

The objectives of the workshop will be to give an overview of the basics of billing and coding and have an in-depth education of the coding changes for 2006 in order to equip the nurse to function in the clinical practice setting with the least amount of discontent and apprehension to maintain excellent patient care.

Nurses will gain knowledge and understanding in coding and billing to take back to the clinic for implementation.

Several colleagues over the past 5 years have openly expressed the challenge of their nursing roles to now include frontline knowledge of proper coding/billing in order to maintain revenue, while trying to maintain excellent patient care. With the many changes a need to have a workshop that meet their needs, in their time frame and provide continuing mentorship was felt favored.

With clinics feeling the effect of the nursing shortage in oncology, it is imperative that those of us who are experienced in oncology gain an understanding and a strong knowledge base for the changing roles. This will be beneficial in the effort to retain and recruit qualified nursing staff. By equipping ourselves with this knowledge as nurses we can share our expertise with our colleagues, with the final product being increase revenue, increased staff support and long-term longevity in the field of oncology.

## 30

**E-CARE: A VIABLE OPTION FOR REMOTE AMBULATORY ONCOLOGY NURSING CARE.** Janice Wright, RN, MS, Princess Margaret Hospital, Toronto, Canada; and Brendan Purdy, RN, MN(c), and Sharon McGonigle, RN, MScN, University Health Network, Toronto, Canada.

The rapid increase in the use of Telehealth videoconferencing to facilitate patient consultation is challenging the present nature of oncology nursing practice. This medium offers an innovative option for comprehensive care delivery in ambulatory cancer clinics. It is essential that nurses know and understand the clinical application of this medium in order to provide leadership in developing, applying and managing e-care oncology programs.

The Allogeneic Blood and Stem Cell Program (ABSCP) at Princess Margaret Hospital (PMH), Toronto, Canada performs 75 transplants annually and manages approximately 600 outpatients. The majority of patients reside in communities more than 100 miles from PMH. The ABSCP Nurse Practitioner sought to determine whether Telehealth videoconferencing would be a viable service delivery model to meet the complex needs of their remote patients and care partners.

The ABSCP introduced Telehealth into their clinic as a pilot project in early 2005. Patient selection criteria included: complexity of symptoms, therapeutic plan and geographical remoteness. Their progress was monitored via videoconferencing for up to 12 months with a goal of improving symptom management through partnered supportive care in their home communities. Nursing-Sensitive Patient Outcome measures included: symptom experience in relation to Graft vs. Host Disease; functional status; and economic impact.

Findings from the pilot study demonstrate the effectiveness of Telehealth through:

1. Enhanced monitoring capability for mucositis management with high-resolution cameras.
2. Improved assessment of patients' health status permitting tailoring of clinical interventions through more frequent appointments.
3. Increased patient satisfaction due to increased activity tolerance and improved role functioning with improved treatment compliance.
4. Improved access to care for patients in their distant communities – thereby reducing out of pocket family costs, commuting time, and a sense of rural isolation.

The ABSCP team successfully integrated Telehealth into its clinical nursing practice as an innovative option for complex symptom management and enhanced treatment compliance within a remote patient population. The findings demonstrate that telehealth videoconferencing improved

Nursing-Sensitive Patient Outcomes, increased patient satisfaction, and decreased health care costs. This initiative has changed nursing practice in ambulatory clinics at PMH and has implications for the management of remote oncology patients.

### 31

**A PATIENT CENTERED WEB-BASED APPLICATION FOR ONCOLOGY NURSING TELEPHONE TRIAGE.** Virginia Martin, RN, MSN, AOCN®, Tracy Christie-McLain, MBA, Mark Siemon, Carolmarie Mahoney, and Michael Bookman, MD, Fox Chase Cancer Center, Philadelphia, PA.

Telephone triage is the process of ensuring safe and effective disposition of patient concerns or problems by telephone. Documentation of each telephone encounter is required for medical and legal reasons. Developing a system for documentation and improved continuity of telephone interactions was identified as an area for improvement.

An NCI designated comprehensive cancer center had a call center for medical and surgical oncology patients to utilize seven days a week, 24 hours a day and report concerns to an oncology nurse. Historically, this documentation of telephone nurse encounters was in a written format that after completion was sent to medical records for filing in the chart. The information from that call could theoretically be retrieved but often was not and when recovered not current enough to be helpful. A group was convened to improve the process of documentation and consider an electronic system.

A major goal was to provide a secure two-way messaging system in which the message could be accessed in real-time, ensuring a faster response time to patient concerns. The group members included: oncology nurses, a system analyst, physician, administrator, and web programmers. The group met weekly to design and develop a web-based tool for sending and receiving secure messages. The group determined that the tool would need to be able to send and receive the message to a group or individual; the recipient should be able to claim responsibility and assure the issue is addressed; multiple care providers could append an open message; and when the issue is fully resolved the message identified as completed. All messages are patient centered and all previous messages are accessible by looking up the patient.

The new system provides reports that measure response time, time to completion, workload, quality monitoring, and the ability to analyze type of call and identify a better route for non-nursing patient concerns.

The patient centered, secure, web-based documentation system for telephone encounters has met patient and nursing expectations by providing better continuity of patient care, improved staffing for call volume, better turn around time with timely nurse/physician interaction, and improved skills on the computer for nurses.

### 32

**ALIGNING NURSING RESOURCES WITH PATIENT NEEDS: AMBULATORY NURSE-LED CANCER CARE IN BRITISH COLUMBIA.** Tracy Truant, RN, MSN, and Elena Serrano, RN, BSN, MLT, British Columbia Cancer Agency, Vancouver, Canada.

Challenged with finding new ways to safely and efficiently prioritize and meet escalating patient need, against a backdrop of fiscal restraint, nurses in one provincial cancer agency designed and are implementing a new ambulatory model of care that is patient needs focused and outcome-oriented. Ambulatory nurse-led Patient Support Clinics (PSCs) provide patients with timely access to nursing care that meets expressed needs (e.g. symptom management; education, treatment decision making support and counseling; referral to resources; navigation of cancer care system, etc). Patient Support Clinics are facilitated by Registered Nurses practicing to their full scope, supported by the interprofessional team, and complement the existing medically oriented clinics.

The purpose of this project is to align patient needs with nursing resources in the ambulatory care setting to achieve specific outcomes for patients, nurses, and the interdisciplinary team. Current practice did not align nursing resources with patient needs, nor specifically measured outcomes of nursing care, leading to concerns about gaps in care and suboptimal clinical outcomes for patients.

Focus groups, literature review, site visits and pilot studies provided the foundation for nurses to examine and gain clarity regarding their role, scope of practice, and identification of population-focused patient needs for nursing care. Competencies to practice to full scope as RN in nurse-led

PSCs were articulated, and ongoing education is in progress. A rigorous evaluation plan was articulated with outcomes measured at baseline, three months and one-year post implementation. Change theory and transition models are being utilized throughout the change process to guide and reflect on the evolution of this new care delivery model.

Preliminary results indicate that nurse led PSCs are a feasible option to deliver care that is patient needs focused and supports nurses to practice to their full scope. Patients report receiving timely access to nursing care, optimal symptom control, and improved quality of life when cared for within a PSC. Nurses have reported greater job satisfaction, and an improved quality practice environment.

It is anticipated that nurse-led PSCs will enhance nursing recruitment and retention, enhance the image of nursing in cancer care, and improve interprofessional collaboration.

### 33

**INTEGRATED ONCOLOGY CARE: MEASURING AOCNP PRACTICE OUTCOMES.** Judith Much, RN, AOCNP, the Cancer Institute of New Jersey, New Brunswick, NJ; and Gregory Harper, MD, Krista Casey, and Thomas Wasser, PhD, Lehigh Valley Hospital and Health Network, Allentown, PA.

Inpatient oncology care is expensive and often characterized by discontinuity and fragmentation of services. In 2003 a proposal was funded to improve the care of hospitalized heme/onc patients at this major community teaching hospital. The Integrated Oncology Care (IOC) initiative supported a nurse practitioner ("NP") to develop, pilot, and implement a collaborative practice model with Oncology and Hematology attending physicians.

The purpose of the project was to reduce costs, LOS (length of stay), and practice variation, as well as to increase patient and provider satisfaction through the interventions of an NP.

With the IOC steering committee, the NP identified need for and developed symptom management protocols, rounded daily with oncology attendings to provide continuity of care, held daily nursing rounds with staff, entered orders, provided "hospitalist" support to staff and patients for medical emergencies and other issues when attendings were not on the unit, and provided patient and family communication on medical, symptom management and supportive issues. For six months after project initiation, the NP observed and developed the practice model and a plan for piloting the intervention. Pilot intervention took place over 6 months with both oncology practices. After evaluation of the pilot, the NP worked only with one of the oncology practices for an additional 6 months. Data was collected for a variety of outcomes including total costs (TC), variable costs (VC) and LOS.

Although TC decreased over baseline during the intervention period, it was not statistically significant. However VC were reduced by over \$1300/case for both oncology practices:  $p < 0.032$  in one group and  $p < 0.059$  on the other. The LOS in the group with the NP intervention at the second six month time point was significantly less ( $p < 0.037$ ) than the "control" group. Decrease practice variation was seen in reduction in standard deviation in all measures.

The clinical expertise of an oncology NP can make a significant contribution to inpatient care to patients, staff, and the institution through provision of continuity of care and expert clinical judgment. At a time when hospital costs are rising, the contributions that can be made by NPs can be well worth their salary.

### 34

**THE DOCTORATE OF NURSING PRACTICE: WHAT IS IT AND WHAT DOES IT MEAN FOR ONCOLOGY NURSES?** Sharon Krumm, RN, PhD, Sidney Kimmel Cancer Center at Johns Hopkins Hospital, Baltimore, MD; JoAnn Coleman, RN, MS, CRNP, AOCN®, Johns Hopkins Hospital, Baltimore, MD; and Anne Belcher, PhD, RN, AOCN®, FAAN, Johns Hopkins University School of Nursing, Baltimore, MD.

The American Association of Colleges of Nursing has proposed the Doctor of Nursing Practice (DNP) as a terminal degree. The DNP would replace the master's degree for nurses in advanced practice or leadership roles by 2015.

Oncology nurses must be engaged in the dialogue about the DNP, and must understand the rationale, and its potential impact on practice, the profession, and society.

The proposal's rationale include: 1) other health care disciplines (medicine, pharmacy, physical therapy) require a doctorate; 2) the terminal

practice degree will address the projected shortage of faculty; and, 3) the complexities of managing care (e.g., increasing acuity and complexity of care, and technology and knowledge expansion) require a DNP.

Clinical nurse specialists, educators, researchers, and administrators are included in the Oncology Nursing Society's (ONS) definition of advanced practice nurses (APN). Similarly, the American Nurse Association Policy Statement from 1995 states that advanced practice is used to refer exclusively to clinical practice.

The American Association of Nurse Practitioners has endorsed the proposal. Similarly, the American Association of Nurse Anesthetists plans to move nurse anesthesia education to the doctoral level. However, the National Association of Clinical Nurse Specialists identified issues that need to be addressed, such as how will current practitioners be grandfathered into this change.

The National Academy of Sciences reports that the need for doctorally prepared practitioners and clinical faculty would be met if nursing developed a non-research clinical doctorate. This statement which supports the DNP proposal forces oncology nurses to seek answers to the following questions: 1) Will the DNP disenfranchise current APNs who believe that they are appropriately educated for their roles? 2) Will the separation of the research and practice doctorate erode nursing's progress in the development and utilization of knowledge? 3) How will the DNP contribute to or detract from cost, quality, and access to care? 4) Will the DNP strengthen society's image of nursing or lead to further confusion about entry into practice? 5) Should the DNP occur only at the post-master's level?

### 35

**THE ROLE OF THE ONCOLOGY NURSE CASE MANAGER IN FACILITATING INTER-HOSPITAL TRANSFERS.** Kathy Rogala-Scherer, RN, Roswell Park Cancer Institute, Buffalo, NY.

The demand for inpatient beds frequently outpaces the supply at a freestanding NCI designated comprehensive cancer center.

The purpose of this abstract is to discuss nurse case manager driven solutions focused on enhancing capacity and maximizing resource utilization

The oncology nurse case manager obtains information from the hospital requesting patient transfer. This information includes insurance, demographics, history and physical and pertinent clinical information supporting a malignant diagnosis. Evaluates information supplied by the requesting hospital and reviews with the accepting oncologist and with the intensivist if a critical care bed is indicated. Does not review transfers occurring after 5 pm on weekends, or on holidays. Data for these cases are analyzed and compared with those reviewed by the oncology nurse case manager to determine variance in outcomes.

Patients reviewed have more predictable, and often better outcomes due to careful screening that ensures access to all required resources. Bed utilization and availability is improved for those patients who both require the specialized services of a comprehensive cancer center and are able to physically tolerate therapeutic interventions including surgery and/or chemotherapy. The process of screening patients who either are not medically stable or who do not require the specialized resources available at a cancer center makes it more likely that beds are available for those that do.

Given the likelihood of a persistent inpatient bed shortage, strategies to improve utilization by those most likely to benefit will result in increased satisfaction for patients and providers.

### 36

**SEATTLE CANCER CARE ALLIANCE (SCCA) DISCHARGE MEDICATION STUDY: AN EVIDENCE-BASED PROJECT.** Terri Cunningham, RN, MSN, AOCN®, and Mihkai Wickline, RN, MN, AOCN®, Seattle Cancer Care Alliance, Seattle, WA; Bonnie Fryzlewicz, RN, MN, APON, Childrens Hospital and Regional Medical Center, Seattle, WA; Donna Berry, RN, PhD, AOCN®, University of Washington School of Nursing/Seattle Cancer Care Alliance, Seattle, WA; and Carolina Sue Berg Bonham, RN, BSN, University of Washington Medical Center, Seattle, WA.

Complex healthcare systems are replete with opportunities for miscommunication, particularly with vulnerable patients who are compromised physically and emotionally during cancer therapy. Transition from the hospital to ambulatory care is a time in which accurate understandings are key for successful self-care, notably self-administration of medications.

The purpose of this study was to determine oncology and HSCT patients'/caregivers' understanding of discharge medication regimens follow-

ing a hospital stay and to determine if the outpatient receiving nurse was aware of discharge medications. Two priorities in the 2005 ONS Research Agenda are directly relevant to this study: 1) research in nursing-sensitive patient outcomes and 2) translational research.

The Quality Health Outcomes Model guided our approach to this study. This model illustrates how aspects of the healthcare system mediate patient outcomes.

SCCA patients/caregivers who received chemotherapy as inpatients were offered participation as well as the ambulatory care nurses. Patients/caregivers were interviewed after discharge, inquiring as to knowledge (drug name, dose, frequency and purpose) and use of discharge medications. Then, the receiving ambulatory care nurse was interviewed. Percents of accurate medication knowledge and use and percents of receiving nurses' knowledge of discharge medications were calculated.

Fifty-three adults and 19 children were enrolled (40 general oncology and 32 HSCT patients) in the study. This abstract includes data from the adult patients and their receiving nurses. Of the 53 adults, 36 were interviewed post-discharge revealing multiple discrepancies between the prescribed discharge medications and what the patient was able to report about their discharge medications and that the written nursing discharge instructions often differed from the discharge prescriptions. In addition, there were differences in the receiving nurses' knowledge (N=34) about discharge medication depending on the service setting. HSCT nurses were aware of the medications in 20/22 patients, whereas nurses receiving general oncology patients were aware in 4/12 cases. Clearly, improvements are indicated in our patient education approach and system wide communication. Using these data as baseline, the research team will evaluate the findings and suggest mechanisms, processes or tools that will improve patient discharge medication understanding and communication with outpatient receiving nurses.

### 37

**A STUDY ON THE RELATIONSHIP BETWEEN FATIGUE, PAIN, INSOMNIA, AND GENDER IN PERSONS WITH LUNG CANCER.** Amy Hoffman, MSN, RN, Barbara A. Given, PhD, RN, FAAN, Alexander von Eye, PhD, Charles W. Given, PhD, and Audrey G. Gift, PhD, RN, FAAN, Michigan State University, East Lansing, MI.

Lung cancer is a disease with serious concurrent symptoms, such as fatigue, pain, and insomnia for both men and women. Investigating symptoms that may cluster together in specific cancer populations is important and is relatively new to nursing. Likewise, the study of gender differences to improve nursing-sensitive patient outcomes such as symptom status has become prominent. Targeting interventions towards symptom clusters and gender differences may identify those with lung cancer who could benefit from tailored symptom management protocol.

For recently diagnosed persons with lung cancer, this study examined the relationship between fatigue, pain, insomnia, and gender, while controlling for age, co-morbidities, and stage of cancer.

The Theory of Unpleasant Symptoms (TOUS) was used to guide this study. The TOUS conceptualizes symptoms as occurring together and identifies categories of antecedents to the symptoms.

Secondary data analysis from baseline observation of a randomized clinical intervention trial was performed on 80 persons with lung cancer using only their pre-chemotherapy information. Multinomial log-linear modeling was performed to identify the most parsimonious model from the saturated model to explain the relationships between fatigue, pain, insomnia, and gender.

Among patients with lung cancer, fatigue (94%) and pain (67%) were the most frequently occurring symptoms with insomnia occurring 50% of the time. A model containing all main effects; 2-way interactions of fatigue and pain, pain and insomnia, and insomnia and gender; and the 3-way interaction of fatigue, pain, and insomnia along with three covariates (i.e., age, co-morbidities, and stage of cancer) was a good fit to the data (Likelihood Ratio Chi-Square 0.875; 2 d.f.;  $p = 0.646$ ). Parameter estimates indicate a statistically significant effect from the model was the 3-way interaction of pain, fatigue, and insomnia. Gender did not make a difference. Also, the delta difference test shows that age, co-morbidities, and stage of cancer are not significant covariates. By understanding this symptom cluster, oncology nurses can target specific troublesome symptoms to optimize symptom management and achieve the delivery of high quality cancer care.



### 38

**ONCOLOGY NURSES' SELF-REPORTED SMOKING BEHAVIORS AND PERCEIVED ROLE IN SMOKING PREVENTION EDUCATION WITH PATIENTS: AN INTERNATIONAL STUDY.** Judi Johnson, PhD, RN, FAAN, Healthquest, Minneapolis, MN; Emiko Endo, RN, PhD, Miyazaki Prefectural Nursing University, Miyazaki, Japan; Shizue Suzuki, RN, PhD, School of Nursing, Kochi Womens University, Kochi, Japan; Yeu-Hur Lai, RN, PhD, National Taiwan University, Taipei, Taiwan; Young-Hee Yang, RN, PhD, Department of Nursing, Dankook University, Seoul, Korea; Alexander Molassiotis, RN, PhD, School of Nursing, University of Manchester, Manchester, United Kingdom; and Lesley Degner, RN, PhD, School of Nursing, University of Manitoba, Winnipeg, Canada.

Tobacco use is the leading cause of preventable cancer death. Worldwide one in three adults smoke. 30 million are projected to start annually. Tobacco-related illness, and the treatment of cancer and its side effects, is associated with increasing health costs and lowered quality of life. Research indicates that smoking cessation interventions by nurses are successful. Oncology nurses see the effects of tobacco use and have access to cancer patients who are more likely to be receptive to prevention messages. Therefore, it is essential to know if oncology nurses worldwide are smoke-free themselves and use their beliefs about smoking to inform and educate patients about smoking cessation.

The purpose of this smoking study was to describe and compare smoking habits, smoking beliefs, and perceived role with patients in smoking cessation education of oncology nurses in Canada, Japan, Korea, Taiwan, United Kingdom, and the United States. It addresses ONS's research priority in health promotion.

The Health Belief Model guided this study examining nurses' beliefs, perceived barriers and personal smoking practices, as well as potential cultural differences, to determine the effect these have on the smoking assessment and education provided to patients by these nurses.

A convenience sample of oncology nurses was recruited from those attending nursing conferences/meetings of oncology nursing organizations. Total of 759 nurses (96 to 236 from each of the six countries) completed an anonymous, 27-question, Likert-type, investigator-designed survey, translated into their native language. Analysis was performed using descriptive and non-parametric statistics.

Findings indicate only 4.5% of those surveyed currently smoke. Overall, 74.2% of nurses assessed their patients' smoking habits frequently/always, but far fewer (49.6%) discuss smoking cessation with patients who smoke. Japanese nurses were most likely to assess smoking behavior of patients (85%), however, less likely to discuss smoking cessation (27%). Over 60% of Korean, U.S., and Canadian nurses were likely to discuss smoking cessation with their patients who smoke. Although 95% of nurses stated they believed second-hand smoke poses a danger, only 30% reported discussing this with patients. Additional comparisons of beliefs and barriers to smoking cessation and education and implication for practice will be presented.

Funding Sources: ONS special project grant received in 2005 by Metro-MN. Chapter of ONS.

### 39

**DON'T FORGET TO LIGHTEN UP: HELIOX THERAPY FOR UPPER AIRWAY OBSTRUCTIONS.** Gina Domenick, BSN, RN, and Marie Swisher, MSN, RN, Johns Hopkins Hospital-SKCCC, Baltimore, MD.

Dyspnea is the fifth most common and sixth most distressing symptom experienced by patients with cancer. Oxygen therapy is a common treatment for dyspnea although not always effective. Upper airway obstructions, such as malignant masses or severe mucositis may decrease the effectiveness of oxygen therapy. Combining oxygen and helium, heliox, may improve oxygenation and decrease ventilatory effort. When an obstruction is present in upper airways, gas flow becomes erratic, causing turbulent airflow with hypoxemia and increased respiratory effort. Helium offers low density properties allowing it to circulate around airway obstructions; improving oxygen delivery. Historically, heliox has been used in pediatric patients to treat asthma and post extubation stridor, although there is growing evidence supporting its application in adults.

The purpose of this presentation is to provide an overview of nursing care of the patient receiving heliox therapy using a case exemplar. The presentation includes pathophysiology of upper airway obstructions, their clinical presentation, and nursing care for patients receiving heliox.

Through specific case discussion, the presentation highlights ideal patient selection for this therapy, clinical care, and patient education. The interdisciplinary efforts of nurses, oncologists, pulmonologists, anesthesiologists, and respiratory therapists can optimize administration of this novel therapy.

This presentation explores the clinical application of a new type of oxygen therapy designed to abrogate dyspnea, and enhance oxygenation in patients with upper airway obstruction. It can be used to prevent the need for insertion of an artificial airway, or to provide symptomatic support at end of life. It requires the support of respiratory therapy and specialized nurse care.

Heliox can improve oxygenation while patients are waiting for other invasive interventions to take effect. Intubation and ventilatory assistance may be contraindicated due to patients' advanced directives and advanced disease processes. The application of heliox as a type of non-invasive ventilation may allow more time to discuss code status with patients and families who have not completed advanced directives. Heliox can reduce air hunger and provide comfort at end of life.

### 40

**PARA FLU AND THE OUTPATIENT CLINIC "PANDEMIC."** Laura Turkel, RN, BSN, and Cynthia Besas, RN, BSN, OCN®, Duke Health System, Durham, NC.

Topic: Factors external to an Outpatient Stem Cell Transplant Clinic may conspire to infect immuno-compromised patients who may unwittingly cause a widespread Para Flu outbreak among the out patient population. A careful review of existing procedures and the implementation of a pro-active action plan are vital to avoid the epidemic spread of Para Flu through the clinic.

Purpose: The purpose of this presentation is to illustrate as an exemplar from one institution how, as a result of an unexpected and deadly outbreak of Para Flu, clinic staff retrospectively analyzed external sources of Para Flu contagion to develop procedures to limit the epidemic spread of Para Flu among Outpatient Stem Cell Transplant Clinic patients.

Interventions: Highly effective hygiene and isolation protocols within the Outpatient Stem Cell Transplant clinic were inadequate to protect immuno-compromised patients from exposure to Para Flu while utilizing hospital transportation services, waiting rooms, undergoing hospital based procedures and socializing with fellow patients. The presentation will describe how clinic staff evaluated its processes, developed facility improvements, secured improved transportation services, and developed methods for improved communication between the Outpatient Stem Cell Transplant clinic, the main hospital, staff and clinic patients.

Interpretation: Short-term efficacy will be measured by the acceptance and implementation of staff recommendations for process improvement. Long-term efficacy will be evaluated based upon the success of implemented protocols against a potential Para Flu "epidemic". Data on adoption of recommendations and infection rates will be presented.

Discussion: A significant risk factor for immuno-compromised patients is Para Flu infection through use of hospital based medical care, transportation services and patient-to-patient interaction. A thorough and pro-active analysis of the risk of infection external to an outpatient clinic will reduce the risk of contracting Para Flu, will enhance the opportunity for Outpatient Stem Cell Transplant procedure success and will enhance staff's ability to ensure patient safety.

### 41

**IMPROVING RECOGNITION OF DELIRIUM IN ONCOLOGY PATIENTS: A NURSING SCREENING INITIATIVE.** Gina Szymanski, MS, RN, Sharon Krumm, RN, PhD, Mikaela Olsen, RN, MS, OCN®, and Laura Hoofring, RN, MS, Johns Hopkins Hospital, Baltimore, MD; Vicki Mock, RN, PhD, Johns Hopkins Hospital School of Nursing, Baltimore, MD; and Lori Paine, RN, MS, Johns Hopkins Hospital, Baltimore, MD.

Delirium is "an acute global alteration in mental state with an unidentifiable or presumed physical cause," Moore 1998. Cancer patients are at high risk for developing delirium. The high incidence of patient falls, increased rates of morbidity and mortality, as well as, longer and costlier hospitalizations demonstrates the importance of screening and early detection of delirium in the oncology population.

Despite the documented incidence of delirium, it is frequently missed or misdiagnosed. Results from a retrospective patient review in this des-

igned comprehensive cancer center show similar findings. The delirium screening initiative was designed to educate the nurse and screen 100% of all patients admitted to our center.

A yearlong pilot followed by a department-wide rollout of a delirium screening initiative resulted in the documentation of the problem, established a > 25% incidence rate. The bedside nurse completes a reliable and valid screening tool based on observations of the patient throughout the shift. The screening tool is housed in our on-line documentation system, which facilitates data query. More than 2 years of data is now being analyzed to aide in the development of a delirium patient profile for our population.

Upon completion of a comprehensive education program, oncology nurses assessments to screen for delirium. The Intensive Care Delirium Screening Checklist (ICDSC) is the primary screening tool. Unit based clinical nurse specialists perform concurrent audits to monitor compliance and to analyze overall screening results. Specific outcome measures include; actual incidence of delirium, patient falls, length of stay, and the average cost of a hospital stay for a delirious patient. Patient profiling data that is analyzed in delirium positive patients includes age, length and frequency of delirium episodes, concurrent cancer treatments, comorbidities and mortality.

This initiative will demonstrate the results of an intense delirium-screening program in an oncology population. Proper implementation across the department will require a change in practice to facilitate the diagnosis and management of this important problem. This project will contribute to the nursing literature related to delirium in cancer patients and enhance our knowledge of this often overlooked and challenging diagnosis.

## 42

**PREVENTION AS INTERVENTION: DEVELOPMENT OF EVIDENCE BASED LYMPHEDEMA RISK ASSESSMENT TOOL AND PRACTICE GUIDELINES.** Kimberly Willis, RN, BSN, and Marybeth Singer, MS, APRN-BC, AOCN®, Tufts-New England Medical Center, Boston, MA.

The American Cancer Society estimates that more than 211,000 women and 1690 men will be diagnosed with breast cancer in 2005. Relative survival at five years for those with localized disease is 98%(ACS, 2005). Lymph node staging is an essential component of treatment. Despite recent advances in surgical techniques, lymphedema continues to pose a threat to quality of survival for persons with breast cancer. It is estimated that between 10-60% of all breast cancer survivors experience lymphedema. Oncology nurses play a key role in identifying patients at risk and providing necessary education and preventative strategies in order to minimize complications of lymphedema and to improve the quality of life for those suffering from the affects of lymphedema.

Utilizing a thorough review of the literature to date, we developed a risk assessment tool to stratify risk of development of lymphedema. Practice Guidelines were developed and standard teaching plan developed for implementation at our institution

We pilot tested the use of our Lymphedema Risk Assessment Tool and implemented standardized teaching plan for those patients receiving chemotherapy in our infusion center for breast cancer.

Upon completion of above, we elicited feedback from staff and patients regarding their understanding of lymphedema, knowledge of steps to take for signs and symptoms of infection/lymphangitis and preventative measures to avoid injury or overuse of affected limb. Lymphedema is an often overlooked complication of breast cancer treatment and oncology nurses play a key role in partnering with patients in utilization of prevention as intervention.

Oncology nurses, particularly those in advanced practice, play a significant role in educating patients regarding self care and monitoring to prevent and detect early signs of complications related to lymphedema. Utilizing the tools developed by this project and the evidence-based guidelines will improve identification of patients at risk and improve quality of live and reduce risk of complications of lymphedema.

## 43

**BEVACIZUMAB: A NEW TREATMENT FOR NON-SMALL CELL LUNG CANCER?** Caroline Clark, RN, and Jeanine Gordon, BSN, OCN®, Memorial Sloan-Kettering Cancer Center, New York, NY.

In 2005 there will be approximately 172,570 new cases of lung cancer with an estimated mortality rate of 163,510 (ACS, 2004). Given these

statistics, development of new treatments for lung cancer is vital. Bevacizumab is currently being studied for treatment of advanced non-small cell lung cancer (NSCLC) as both a single agent and in combination with standard treatments. A National Cancer Institute clinical trial demonstrated that NSCLC patients who received Bevacizumab in combination with standard chemotherapy had a median survival of 12.5 months compared to 10.2 months in those patients who received standard chemotherapy alone.

Bevacizumab is an angiogenesis inhibitor approved by the FDA in 2005 for first line treatment of patients with metastatic carcinoma of the colon or rectum in combination with other standard chemotherapy drugs. Bevacizumab attaches to and inhibits vascular endothelial growth factor (VEGF). In the presence of Bevacizumab, VEGF cannot stimulate new blood vessel formation. This lack of oxygen and nutrients to tumor cells results in decreased tumor growth and survival.

The purpose of this presentation is to inform oncology nurses about this new treatment option for NSCLC and how to monitor and manage the potential side effects. Educating oncology nurses regarding the numerous considerations of treatment with Bevacizumab will ensure safe administration and patient management.

A care plan will illustrate nursing assessment and intervention based on a retrospective chart review of patients treated with Bevacizumab. This care plan will include criteria for treatment, frequency of treatment, pertinent laboratory values, toxicity screening, and evaluation.

After this presentation, oncology nurses will be able to recognize the specific needs of the NSCLC patient receiving Bevacizumab and intervene to make treatment as safe as possible.

Patients receiving Bevacizumab require close monitoring for adverse effects associated with this treatment as well as timely nursing interventions. Severe hypertension, proteinuria, and congestive heart failure have been noted during treatment. Gastrointestinal perforation and wound dehiscence have been reported in the colorectal cancer population. Specific to the NSCLC population is the risk for life-threatening hemoptysis and bleeding leading to disability or death.

## 44

**NURSING IMPLICATIONS REGARDING THE MANAGEMENT OF SIDE EFFECTS IN A PHASE I STUDY USING GEFITINIB WITH RAPAMYCIN.** Peggy Lyons, RN, BSN, OCN®, Sandra Tourt-Uhlig, RN, BSN, and David Reardon, MD, Duke University Medical Center, Durham, NC.

Small molecular targeting therapies, such as EGFR inhibitors and mTOR inhibitors, are becoming more common in investigational treatments for malignant gliomas and other cancers. As more information is discovered about inhibiting molecular signaling pathways in cells, combinations of these therapies are being studied in Phase 1 human trials. Through these combination therapy clinical trials, new information regarding toxicity profiles is emerging. In a Phase 1 study using Gefitinib and Rapamycin in patients with Malignant Glioma at Duke University Medical Center, numerous cases of mucositis were noted. Also, cases of fatigue and diarrhea occurred, which were noted to be more severe than the toxicity profile of patients treated with EGFR inhibitors alone. In addition, toxicities to Rapamycin may include hypertension, hypercholesterolemia and/or hyperlipidemia, which are not common toxicities encountered by oncology nurses. It is essential for nurses to be aware of the potential side effects associated with using Gefitinib in combination with Rapamycin and effective methods to manage these symptoms.

This poster will inform oncology nurses of the common toxicities observed in this study. Tools developed for educating patients and providers will be demonstrated. Effective nursing management of these toxicities will be discussed.

In this Phase 1 trial oral drug combination, (X#) patients with malignant gliomas were treated daily. Patients returned to clinic approximately every four weeks for toxicity assessment and were monitored throughout their treatment. Due to mucositis noted early in the study, a patient teaching sheet was developed and patients were educated prior to starting treatment. An aggressive mucositis management logarithm was developed with staff instructed on its use.

As a result of this study, a toxicity profile and maximum tolerated dose level were discovered. In addition, patients were better educated regarding anticipating potential adverse events and self care strategies. Nurses played an integral role in improving quality of life and alleviating side effects for

these study patients through upfront education, effective assessment, and appropriate intervention.

Oncology nurses may encounter these toxicities in patients being treated with Gefitinib and Rapamycin. This information will assist nurses in developing treatment strategies to effectively manage these toxicities prior to the patients' initiating therapy.

## 45

**SAFETY PERSPECTIVES ON THE ROLE OF AMG 706, AN INVESTIGATIONAL, ORAL, MULTIKINASE INHIBITOR (MKI), FOR SECOND-LINE TREATMENT OF GASTROINTESTINAL STROMAL TUMORS (GIST).** Marilyn Mulay, RN, MS, OCN®, Premiere Oncology, Santa Monica, CA.

Multikinase inhibitors (MKIs) are being examined for the treatment of gastrointestinal stromal tumors (GIST), a rare neoplasm characterized by well-defined mutations in growth factor receptors (incidence estimated at 5000 cases per year in the US). Patients with GIST frequently possess mutations in c-KIT, which encodes for a receptor tyrosine kinase involved in tumor cell proliferation. Imatinib, a small molecule cancer therapeutic, inhibits Kit and is currently approved for the treatment of GIST. Many imatinib-treated patients with GIST relapse due to additional mutations that confer imatinib resistance. Therefore, new therapeutics targeting mutant Kit and other oncogenic pathways are needed. Angiogenesis, the formation of blood vessels from the existing vasculature, is involved in the malignant potential of GIST. Inhibitors of angiogenesis are important therapeutic candidates for the treatment of imatinib-resistant GIST.

To provide a fundamental introduction to GIST and the side effects seen with AMG 706 treatment, along with methods for managing them.

AMG 706 is an oral MKI that inhibits vascular endothelial growth factor receptors (VEGFR), Kit, and platelet-derived growth factor receptors (PDGFR), resulting in potent inhibition in models of angiogenesis, tumor proliferation, and lymphangiogenesis. AMG 706 inhibits tumor growth directly and blocks its blood supply. AMG 706 is being examined in patients with imatinib-resistant GIST.

Side effects of AMG 706 most commonly include hypertension, diarrhea, fatigue, nausea, and headache. Hypertension has been observed with other antiangiogenic agents and is easily manageable with antihypertensive medication. Patients treated with AMG 706 should be frequently monitored for blood pressure changes. Antihypertensive drugs may be prescribed to bring blood pressure to acceptable levels. The short half-life of AMG 706 allows for rapid treatment interruption in the case of serious adverse effects.

AMG 706 is generally well tolerated, and its activity on multiple kinase targets, including VEGFR, PDGFR, and possibly mutant Kit, makes it an ideal candidate for imatinib-resistant GIST. The side effects of AMG 706 tend to be related to its antiangiogenic activity, and are easily monitored and managed.

## 46

**CLINICAL CHARACTERISTICS AND MANAGEMENT STRATEGY OF REV-LIMID INDUCED TUMOR FLARE REACTION IN PATIENTS WITH CLL.** Kena Miller, FNP, Laurie Musial, RN, and Dawn Depaolo, RN, Roswell Park Cancer Institute, Buffalo, NY; and Cynthia Crystal, RN, Celgene, New Jersey.

Tumor Flare Reaction (TFR) is new side effect (SE) unique to chronic lymphocytic leukemia (CLL) patients treated with lenalidomide. This SE is not reported but pose major concern in patient management. Oncology nurses (ON) learn first hand about SE occurring with new therapies and must develop effective strategies to identify and manage these SE and to promote patient education.

Purpose: To bring forth the clinical characteristics of TFR and share our management experience. Lenalidomide, an immunomodulatory oral agent, FDA approved for 5q deletion MDS and currently investigated in multiple myeloma and CLL patients.

TFR is characterized by a sudden/tender increase in disease effected lymph nodes (LN)/spleen with rash and/or low-grade fever, occurring within 24-48hours of lenalidomide treatment. Usually during 1st cycle and lasting for 14 days. Some patients show an increase in WBC.

Twenty-nine patients with relapsed/refractory CLL enrolled on a phase II trial received lenalidomide 15- 25 mg/d for 21d of 28-day cycle. ON noted sudden tender increase in LN sizes. Progressive disease was a concern but a concurrent decrease in leukemia counts helped identify this an immune reactivation phenomenon, now referred as TFR. TRF

incidence was 67% mostly Grade 1/2. The ON devised following management strategy:

1. Ibuprofen(400-600mg) Q8-Hr x 10-14 days, at onset of pain/LN swelling.
2. Counseling
3. Oxycodone PRN for severe pain.
4. Benadryl PRN

These interventions through ON resulted in adequate management of TFR and improved compliance.

TRF is a new SE of lenalidomide with high incidence, peculiar to CLL. As this agent becomes commercially available, it is germane to the safety and welfare of patients that effective SE management strategies are utilized by ON and be shared with and clinical practitioners to improve patient outcomes. In our experience patient education, counseling and support by the ON played a critical role in early identification and management of this SE.

## 47

**PERFORMANCE IMPROVEMENT: FATIGUE INTERVENTION PROJECT.** Sandy Balentine, RN, OCN®, Mary Dinos, RN, OCN®, Maureen Flannery, LSW, and Fran Cartwright, RN, PhD, AOCN®, Valley Hospital, Paramus, NJ; Bette Williams, RN, Valley Hospital, Ridgewood, NJ; and Linda Ohnikian, RN, Valley Hospital, Paramus, NJ.

Fatigue remains a common and distressing symptom in individuals with cancer. ONS recommends that all patients with cancer should be assessed for fatigue and receive fatigue education and management.

The Performance Improvement Cancer Committee (PICC) identified the need to standardize the assessment and management of fatigue in inpatient oncology, radiation oncology and the ambulatory infusion center. A fatigue management packet was developed based on a literature review. The information packet is consistent with the interventions listed on the ONS "Evidence that nursing interventions influence fatigue".

The 0 to 10 fatigue scale was entered into the plan of care in inpatient oncology, radiation oncology and the ambulatory infusion center. Patients are assessed at the start of treatment, at defined intervals, and when patients complain of fatigue. All patients are given the fatigue management packet. Consistent with the NCCN guidelines (2005) and OCN® (2006 - 2009), patients who score 4 or greater on the 0 - 10 scale (moderate to severe fatigue) are referred to a fatigue counselor for a more comprehensive assessment.

Data for the first month of the fatigue intervention project was reported at the PICC. Although it is a small sample, the data suggests that there are significant differences across diagnoses and treatment regimens. This will remain on the PICC agenda. Data will be examined to identify patients response to the intervention packet and counseling. Revisions to the project will be made. Topics for research will be explored based on this outcome data.

The oncology nurse is in a pivotal position to measure fatigue and to provide information about fatigue management that can influence severity of fatigue and/or the distress experienced form this troubling symptom.

## 48

**VIRTUAL REALITY INTERVENTION FOR CHEMOTHERAPY SYMPTOMS.** Susan Schneider, RN, PhD, AOCN®, Duke University, Durham, NC.

Successful completion of chemotherapy offers a greater chance for tumor response and quality of life. Many patients have difficulty adhering to the regimen because of chemotherapy-related symptoms. Virtual reality (VR) provides a distracting, immersive environment, which blocks out competing stimuli, ameliorates symptoms, and helps patients tolerate treatments.

To determine the immediate and short-term effects of a VR intervention on symptom distress in adults with lung, colon or breast cancer who were receiving intravenous chemotherapy.

Lazarus and Folkman's Stress and Coping Model identify distraction as a coping strategy for managing stressful situations.

123 adults at Duke University participated in the study. The average participant was 54 years old, female and Caucasian. A crossover design was used to examine VR as a distraction intervention to relieve symptom distress in outpatients receiving chemotherapy and to determine the immediate and 48-hour post-treatment effect on symptom distress. Participants were



randomly assigned to receive the VR distraction intervention during one chemotherapy treatment and received no intervention (control) during an alternate matched chemotherapy treatment. The Adapted Symptom Distress Scale-2, Revised Piper Fatigue Scale and State Anxiety Inventory measured symptom distress. The Presence Questionnaire and an open-ended questionnaire were used to evaluate the subjects' VR experience. The influence of age, gender, coping style, and immersive tendency on symptom outcomes was explored. Paired t-tests were used to test for differences in levels of symptom distress: 1) immediately following chemotherapy treatments and 2) 48 hours following the completion of chemotherapy.

Evaluation of the intervention indicated that patients thought the VR was easy to use, they experienced no cybersickness, 86% liked the VR intervention and 82% would use VR again. Patients had an altered perception of time ( $p < .001$ ) when using the VR, validating the distracting capacity of the intervention. However, analysis demonstrated no significant differences in symptom distress immediately or two days following chemotherapy treatments. Patients stated that using the VR seemed to make treatment time shorter and that chemotherapy treatments with the VR were better. However these positive experiences did not result in a decrease in symptom distress. Findings support the notion that using VR can help make chemotherapy treatments more tolerable, but clinicians should not assume that use of VR will improve chemotherapy related symptoms.

Funding Sources: This study was funded by the Oncology Nursing Foundation through an unrestricted grant from Ortho Biotech Products, L.P. and Duke University Medical Center

## 49

EFFECT OF AN INDIVIDUALIZED SYMPTOM EDUCATION PROGRAM ON THE SYMPTOM DISTRESS OF WOMEN RECEIVING RADIATION THERAPY FOR GYNECOLOGICAL CANCERS. Karima Velji, RN, AOCN®, BSCN, MSC, Toronto Rehabilitation Institute, Toronto, Canada; and Judy Watt-Watson, Souraya Sidani, Bonnie Stevens, Lesley Degner, Eva Pathak, Barbara Fitzgerald, and Virginia Mulcahy, Toronto, Canada.

Women who receive radiation therapy for gynecological cancers experience a number of concurrent symptoms, including fatigue, pain, nausea, pelvic symptoms, and mood disturbance. Patients with cancer who experience concurrent symptoms experience considerable amount of distress related to their symptoms unmanaged symptoms have a negative impact on all the dimensions of quality of life. Individualized symptom education interventions have been demonstrated to be effective in reducing symptoms in patients with other types of cancer. However, no studies have been found evaluating these interventions in women with gynecological cancers.

Primary research question

What are the short (at program completion) and long term effects (3-months later) of an Individualized Symptom Education Program (ISEP), as compared to usual care alone, on the symptom distress of women receiving pelvic radiation therapy for gynecological cancer?

Secondary questions

- What are the short and long term effects of ISEP, as compared to usual care alone, on the symptom experience of fatigue, pain, nausea, pelvic symptoms and mood disturbance?

Adapted from Dodd et al. (2001) Symptom Management Model

A two-group randomized controlled trial with repeated measures design. 144 women from large gynecology oncology programs of two teaching hospitals were randomly allocated to either: a) 6-session ISEP group (intervention) or b) usual care group (standard care). An individualized education program based on published (National Cancer Care Network [NCCN], 2001) evidence-based guidelines for symptom management was provided to women at the initiation of radiation therapy and weekly during radiation treatment for a total of six sessions. Outcomes were measured at baseline, program completion, and at 3-months following program completion. Mixed modeling statistical analyses were used to evaluate group and time effects.

Participants in the intervention group showed significant decrease in symptom distress scores at the end of the intervention compared to women who received usual care ( $p = 0.039$ ). Expectedly, both groups experienced worsening of symptoms over the course of radiation therapy. However, women in the ISEP group had less worsening in symptom distress, pain, fatigue, and nausea at the end of radiation treatment.

Funding Sources: National Cancer Institute of Canada funded this study

## 50

THE EFFECTS OF THE INDIVIDUALIZED EXERCISE PROGRAM IN PATIENTS WITH GASTRIC CANCER DURING CHEMOTHERAPY. Sun-Hee Kim, RN, Won-Hee Lee, PhD, RN, Cho-Ja Kim, PhD, RN, Joo-Hyung Kim, DrPH, MS, MPA, Yonsei University College of Nursing, Seoul, Korea; and Seoung-Hoon Noh, MD, PhD, and Hyun-Chol Jeoung, MD, PhD, Yonsei University College of Medicine, Seoul, Korea.

Many studies show that exercise is helpful to cancer patients. However, those studies often deal with a certain group of cancer patients, e.g. early stage Breast Cancer and Hematological Malignances.

It is thus needed to evaluate the accessibility of an exercise program on patients with advanced stage gastric cancer, the most common cancer in South Korea, as well as to consider multidimensional outcome variables representing the effects of exercise program.

This study was intended to evaluate the effects of an individualized exercise program on cancer related fatigue, physical function, attention function and emotional status in gastric cancer patients during chemotherapy.

The intervention was based on the Winningham's Psychobiological-Entropy Model.

Thirty patients were recruited through a randomized control clinical trial design.

The exercise group of sixteen patients performed aerobic exercise, designed to reflect each patient's exercise ability and preference, three or four times a week (two times in the week injected Adriamycin). They were directed based on an exercise education protocol.

Members of the exercise group had monitored the intensity of exercise using Polar watch and submitted exercise log once a week for eight weeks.

The primary outcome is cancer related fatigue (revised Piper fatigue scale). Physical function (12 minute walk test, MOS SF-36), attention function (Cimprich's Attention function test) and emotional status (LASA scale) are secondary outcomes. Data was collected at baseline, the fourth week, and finally the eighth week. The data were analyzed using SPSS 11.5; Repeated measure ANOVA, Bonferroni.

Upon completion of the program in the exercise group, a significant improvement was found in cancer related fatigue ( $p = .009$ ) and physical function ( $p = .001$ ,  $p = .000$ ). To the contrary, the control group produced a significant negative change.

Patients in the exercise group reported no change in attention function ( $p = .061$ ) and emotional status ( $p = .900$ ), but the control group's patients marked significant negative change.

From those results, the effectiveness of the program was confirmed with regard to cancer related fatigue, physical function, attention function and emotional status.

Despite a short period of intervention and small-sized sample, the homogeneity of each group and well-designed program make the effect of the program very significant.

## 51

DISSEMINATING END-OF-LIFE EDUCATION TO ONCOLOGY NURSES USING THE ELNEC-ONCOLOGY CURRICULUM. Michelle Gabriel, RN, MS, OCN®, ACHPN, VA Palo Alto Health Care System, Palo Alto, CA; and Agnes Wong, RN, MS, CNS, OCN®, Kaiser Permanente Medical Center, San Francisco, CA.

Palliative care and end-of-life issues continue to be of critical importance for oncology patients and their families. Until recently, less focus had been placed on providing nurses with the skills needed to practice comprehensive end-of-life care. With societal and professional recognition of the importance of these skills, initiatives such as the End-of-Life Nursing Education Consortium (ELNEC) have been established to address the need to educate nurses in providing quality end-of-life care to patients and their families.

The purpose of this project was to utilize different methods to educate oncology nurses on end-of-life issues using the oncology curriculum of ELNEC, thereby meeting ELNEC's goal to "disseminate palliative care education through (the) local ONS chapter to improve care of cancer patients and their families."

Two approaches were utilized as a means of disseminating palliative care education to the San Francisco Bay Area ONS chapter membership. The first approach was a palliative care column, based on individual

ELNEC modules, and was published as a regular feature in the local and neighboring chapter newsletters. The second approach was a palliative care dinner series, which met every three to four months, with each dinner's lecture based on one of the ELNEC modules.

Both of these educational approaches are ongoing, which will allow for the remaining ELNEC modules to be presented. At the end of this year, questions regarding the utility and significance of these approaches will be included in the annual membership survey. Evaluations are collected at the end of each dinner lecture and look at the usefulness of the information and the ability of the attendee to bring back the information to his/her place of work. The responses to date have been positive, and there is a regular core group of attendees to these lectures.

Through these different approaches, oncology nurses from the San Francisco chapter and the Bay Area have increased access to end-of-life education. These endeavors have met the main goal of the ELNEC-oncology program and can be used by other local chapters as a way to increase palliative care education among oncology nurses.

## 52

**THE USE OF A LUNCH AND LEARN FORUM TO IMPROVE THE NURSES' EDUCATION AND COMFORT LEVEL WITH DYING PATIENTS.** Susanne Fessick, RN, BSN, OCN®, CJW, Richmond, VA.

The Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments (SUPPORT) project demonstrated that despite preferences, >60% of patients die in the hospital. However, many nurses receive little to no training in nursing school to provide this care and thus do not feel comfortable.

The objective of this program was to assess whether expertise and comfort level of nurses new to the field of oncology is gained by providing education on the subject of death and dying during a lunch and learn series of programs.

Healthcare providers employed by a local hospice agency offered three sessions to hospital-based nurses new to oncology. Education was provided in three areas: denial, "difficult" families, and "difficult" pain and symptom management issues. The participants completed a 7-question pre and post survey using a Likert type scale (0-10) with questions about their expertise, training, and comfort level in dealing with these circumstances.

The experience of the nurses in these three sessions ranged from students to experienced nurses of 33 years. Nurses reported improvement in both knowledge and comfort level after the sessions on denial and dealing with the difficult patient. Education level improved 23% after learning about denial and 17% after learning how to handle difficult family situations; comfort level improved 14% and 4% respectively. The educational session on pain and symptom management, however, resulted in a decline in the participant's scores for both education (19%) and comfort level (17%).

In summary, two of the three educational sessions were beneficial in improving the nurses' education and comfort level. Factors that may have affected these results included: timing and duration of programs, and different speakers for all three topics. A decline in ratings for comfort and education for pain and symptom management may be because these were more complex subjects, which cannot be addressed adequately under these time constraints. Overall, however, it appears that programs such as these may be helpful in improving both education and comfort level of nurses.

## 53

**MIXED METHOD EVALUATION OF A LIVING WITH HOPE PROGRAM FOR OLDER TERMINALLY ILL CANCER PATIENTS.** Wendy Duggleby, DSN, RN, AOCN®, University of Saskatchewan, Saskatoon, Canada; Lesley Degner, PhD, RN, University of Manitoba, Winnipeg, Canada; Allison Williams, PhD, McMaster University, Hamilton, Canada; Karen Wright, PhD, RN, University of Saskatchewan, Saskatoon, Canada; Dan Cooper, MDiv, Regina/QuAppelle Health Region, Regina, Canada; David Popkin, MD, Saskatoon Cancer Center, Saskatoon, Canada; and Lorraine Holtslander, MN, RN, University of Saskatchewan, Saskatoon, Canada.

Terminally ill cancer patients endure and cope with their psychosocial pain by maintaining hope. The research team developed a theory-driven intervention, the Living with Hope Program (LWHP), to foster hope and increase quality of life for older terminally ill cancer patients living at home.

The overall purpose of the proposed study is to evaluate the effectiveness of the LWHP in increasing hope and quality of life for older adult community-living terminally ill cancer patients. Psychosocial research of community living older adults is an ONS research priority.

Duggleby and Wright's (2005) theory of "Transforming Hope" was used to develop the intervention and was the framework for this study.

Using a mixed method concurrent nested experimental design 60 terminally ill cancer patients over the age of 60 years were randomly assigned to a treatment and control group. Baseline hope [Herth Hope Index (HHI)] and quality of life scores [McGill Quality of Life Questionnaire, (MQOL)] were collected at the first visit in the patients' homes by a trained research assistant. Those in the treatment group received the LWHP that includes viewing an international award winning video on hope and choosing one of three hope exercises to work on over a one-week period. The control group received standard care. Data was collected one week later from both groups using the HHI and MQOL. Qualitative data using open-ended hope questions were collected from the treatment group.

Data Analysis: Qualitative data was analyzed using thematic analysis. To determine differences between groups, linear regression modeling was used with baseline HHI and MQOL as covariates.

Subjects receiving the Living with Hope Program had statistically significant higher hope ( $df=3$ ,  $F=30.087$ ,  $p=.000$ ) and quality of life scores at visit two ( $df=3$ ,  $F=9.022$ ,  $p=.000$ ) than those in the control group. Qualitative data confirmed this finding with the majority (61.5%) of subjects in the treatment group reporting the LWHP increased their hope. This preliminary evaluation of the effectiveness of the LWHP suggests that it may increase hope and quality of life for older terminally ill cancer patients at home.

Funding Sources: Saskatchewan Health Research Foundation Establishment Grant

## 54

**ONCOLOGY AND BIOETHICS: A SUCCESSFUL PARTNERSHIP IN IMPROVING PALLIATIVE/END OF LIFE CARE.** Sara Welsh, RN, MSN, CNAA, and Mary Ann Bowman Beil, Memorial Health University Medical Center, Savannah, GA.

Approximately one-third of all hospital deaths are related to cancer. Numerous studies have identified the opportunities to improve palliative and end of life care. Coordination of care and timely referrals to appropriate services can greatly impact cancer patients' quality of life throughout the disease continuum.

The partnership of Oncology and Bioethics can provide a powerful alliance in improving end of life care.

To improve palliative and end of life care for patients and their families in an academic medical center. To identify and implement appropriate policies, procedures and programs to enhance patient care. To implement the new role of Bioethical Nurse Liaisons.

Interventions included: Implementation of Bioethical Nurse Liaison Positions, expansion of the In-House Palliative Care Consult Services, initiation of an Out-Patient Palliative Care Service, revision of the End of Life Care Policy, approval of the End of Life Care Model, and the provision of professional and community education.

The hospital dashboard included initiatives on end of life care.

Bioethical Nurse Liaison positions were created and implemented, two of which were oncology nurses. Bioethical Nurse Liaisons submitted monthly reports on issues addressed in the clinical units. Palliative care services have been expanded.

Oncology nurses can serve as institutional champions in leading initiatives to improve palliative and end of life care for patients and their families. Oncology nurses can serve as clinical experts to help develop programs, as advocates for patients and families, and as educators to other staff and the community.

## 55

**CREATING A STAFFING MODEL FOR RN BLOOD AND MARROW TRANSPLANTATION COORDINATORS IN THE PRE-TRANSPLANT PHASE OF THE BLOOD AND MARROW TRANSPLANTATION JOURNEY.** Debra Adornetto-Garcia, RN, MS, AOCN®, ANCC, Bill Kersten, Eric Koval, RN, BSN, and Larry Vines, University of Texas M.D. Anderson Cancer Center, Houston, TX.

At one of the largest Blood and Marrow Transplantation centers in the country, determining the correct number of pre-transplant RN

Coordinators has always been a challenge. Staffing based on volume of patients and transplant numbers has proven to be an ineffective measure of actual workload. A staffing model was created to determine the correct numbers of personnel necessary.

The goal was to improve morale, retention and create a data source that could be used to justify and request additional positions.

First, data was collected on volumes of total "active" BMT patients that each coordinator is responsible for on a monthly basis. Next, a list of the coordinator activities were created and loaded into a hand held device which was used to capture the time spent on each of the coordinator activities such as consults visits, teaching, phone calls, email, and documentation. The coordinator activities were captured and recorded during a two-week pilot. The hand held device randomly beeped 20 times in 8 hours prompting the coordinators to enter the activity they were performing at that moment.

The findings from the pilot resulted in the calculation of the standard work hours for the week with an additional 63 minutes per person added for fatigue or personal time. The hours were then divided by the patient activity level to determine the activity hours per patient and were multiplied by the projected weekly patient load to calculate the projected activity hours. A 15% allowance for productivity variability was added and divided by 40 hours per workweek to obtain the projected number of coordinators

The staffing model demonstrated to the current 6 coordinators and lead coordinator the optimal number of patients that each of them can effectively manage. Creation of the staff model has added meaning to the work of the team and a basis to support growth.

## 56

**NEW GRADUATE ORIENTATION TO AN INPATIENT HEMATOPOIETIC STEM CELL TRANSPLANT UNIT: A PROCESS IMPROVEMENT PROJECT.** Terrie Paine, RN, BSN, OCN®, University of Washington Medical Center, Seattle, WA; and Mihkaila Wickline, RN, MN, AOCN®, Seattle Cancer Care Alliance, Seattle, WA.

As the nursing shortage intensifies, Hematopoietic Stem Cell Transplant (HSCT) units are hiring new graduate nurses. Due to the complexity of the patient population, the orientation program is important to ensure adequate training for patient safety, job satisfaction and nurse retention.

We had two main objectives for improving our orientation program. The first was to prepare new graduates who, with strong mentoring and resources, could safely care for HSCT patients after 6 weeks and the second was to strengthen our preceptor pool.

Our team for this process improvement project was composed of the Nurse Manager, Staff Development Specialist, Clinical Nurse Specialist, Nurse Educator and Assistant Nurse Managers. We began by evaluating the previous orientation model through focus groups with recently oriented nurses and preceptors. From there we developed a 6-week orientation grid that includes weekly goals, steps for implementation and a comprehensive list of available resources/references. We developed a daily 'brain sheet' for the new graduate that included prompts for patient care, information for report, and reminders of daily work. A final point was the assignment of each orientee to a member of the management staff for a weekly meeting to ensure that they are on-track with their orientation and successfully becoming a member of our team. We developed an eight hour Preceptor Workshop to standardize the role of the preceptor, reinforce the importance of using policies and procedures, educate about the new orientation grid and provide support.

A tool was developed for the orientee to evaluate their orientation and give feedback to their preceptors. The project team has continued to evaluate the program and incorporate feedback that is gathered through these evaluations and discussions at the Preceptor Workshops.

The 'orientation grid' has been so successful that we have used it as a template to develop ICU and telemetry orientation programs on our oncology unit. Providing references on the grid is critical to our philosophy that nurses with clinical questions must access the policy and procedure manual for answers. Our goal is to standardize clinical practice amongst all nurses and to emphasize that from the first day of orientation.

## 57

**SYMPTOM BURDEN IN PATIENTS UNDERGOING ALLOGENEIC BLOOD OR MARROW TRANSPLANTATION FOR AML/MDS.** Lori Williams, RN, DSN,

OCN®, AOCN®, Xin Shelley Wang, MD, MPH, Charles Cleeland, PhD, Gary Mobley, MS, and Sergio Giralt, MD, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Symptom burden is the impact of all disease- and therapy-related symptoms on one's ability to function as one did before the onset of disease or therapy. Symptoms are experiences reported by patients, while toxicities are clinicians' evaluation of the effects of disease and treatment on patients. Toxicities of blood and marrow transplantation (BMT) are well described in the literature, but symptoms are not well reported. Lack of understanding of symptoms and symptom burden may result in failure to address symptoms and return patients to optimum functioning.

The purpose of this study was to describe symptom burden, including severity and interference, experienced by patients with AML/MDS undergoing allogeneic BMT. Research in cancer symptoms and side effects is an ONS research priority.

Cleeland and Reyes-Gibby's conceptual model of symptom burden was the theoretical framework for this study.

This longitudinal, descriptive study assessed symptom severity and interference using the M. D. Anderson Symptom Inventory in 30 patients undergoing allogeneic BMT for AML/MDS. Results of symptom assessment at 5 time points (baseline, nadir, engraftment, 30 days post-BMT and 100 days post-BMT) were analyzed using descriptive statistics and t-tests to identify significant differences in symptom severity and interference over time.

Mean global symptom severity was increased significantly from baseline at nadir ( $p=.00006$ ), engraftment ( $p=.002$ ), and 30 days post-BMT ( $p=.02$ ), but returned to baseline by 100 days post-BMT ( $p=.3$ ). Only the mean symptom severity of dry mouth remained significantly elevated ( $p=.006$ ) at 100 days post-BMT. Mean global symptom interference was increased significantly from baseline at nadir ( $p=.002$ ), engraftment ( $p=.04$ ), 30 days post-BMT ( $p=.008$ ), and 100 days post-BMT ( $p=.03$ ). At day 100 post-BMT, the mean symptom interference with general activity ( $p=.04$ ) and relations with other people ( $p=.01$ ) remained significantly elevated from baseline. These results corroborate reports that patients experience significant treatment side effects during BMT. Symptom interference with functioning continues to affect patients 3 months post-BMT. Findings indicate the need to investigate the impact of specific symptoms on symptom burden, explore interventions to decrease the severity of specific symptoms, and decrease symptom burden by assisting patients to regain physical and social functioning following BMT.

## 58

**QUALITY OF LIFE IN PATIENTS WITH MDS: IMPLICATIONS FOR NURSING.** Mary Thomas, RN, MS, AOCN®, VA Palo Alto Health Care System, Palo Alto, CA; and Kathy Heptinstall, RN, BSN, Myelodysplastic Syndromes Foundation, Crosswicks, NJ.

Quality of life (QOL) is an important concept to oncology nurses. Yet little is known about the impact of specific illnesses, such as Myelodysplastic Syndromes (MDS), on QOL from the patient's perspective.

The purpose of this study was to explore the impact of MDS on patients' QOL. A secondary aim was to identify the impact of nursing on patients' QOL.

QOL was conceptualized as a multi-dimensional construct, based on the works of Ferrell and Cella, and included physical, functional, emotional, social and spiritual domains.

Five focus groups were convened at different geographic locations throughout the United States; 70 MDS patients attended (89% actively participated). While the discussions varied, core questions were asked at each session. Sessions were audiotaped and professionally transcribed. Transcripts were coded and emergent themes identified using thematic analysis methods (Burnard, 1991); demographic variables were analyzed with descriptive statistics.

The sample was 93% Caucasian, 51% male, and elderly (mean age 69 + 9 years). Median time since diagnosis was 26 months. Most patients were receiving treatment, commonly transfusions or growth factors. While MDS was described as causing a substantial impact on one's functional well-being, the emotional impact was often viewed as more problematic, and included reactions of shock, anger, depression, and anxiety. Uncertainty was a significant issue. Patients poignantly described the difficulties encountered in their relationships with physicians. The need for obtaining accurate, relevant information related to MDS and treatment was described as paramount and difficult to fulfill.



Nurses were described as pleasant and encouraging. However, nursing interventions were typically limited to administering transfusions and medication. With few exceptions, patients reported receiving little information from nurses; in fact, some patients described the need to educate the nurse regarding MDS. However when nurses did provide information and counseling, its impact was positive and profound.

Data from this study suggest that MDS has a substantial, often negative impact on patients' lives. Nurses should be cognizant of this impact and direct their attention at providing more comprehensive education and support for these patients throughout the illness trajectory. In so doing, the adverse impact of MDS on patients' QOL may be diminished.

## 59

**ONCOLOGY NURSES' ATTITUDES AND PRACTICES ABOUT INFORMING CLINICAL TRIALS PARTICIPANTS OF STUDY RESULTS.** Susan Bauer-Wu, DNSc, RN, Monica Fulton, BSN, MBA, Eric Winer, MD, and Ann Partridge, MD, MPH, Dana-Farber Cancer Institute, Boston, MA.

Growing evidence supports that cancer patients are interested in being offered the results of clinical trials for which they participate. However there is no standardization or requirements for clinicians or researchers to offer such information to patients. Better understanding oncology nurses' perspectives on this issue is important to the development and integration of formalized systems to share clinical trial results with patients.

To examine the attitudes and practices of oncology nurses with regard to informing clinical trial participants study results.

This study was guided by key principles of research ethics: respect for persons, beneficence, and justice.

A geographically dispersed sample of 125 oncology nurses who are members of the cancer cooperative group, Cancer and Leukemia Group B, completed and returned a mailed 31-item questionnaire designed and piloted for this study. Descriptive statistics were conducted.

62% of the nurses sampled do not offer results to patients and only 10.4% offer over half of the time. 73% agreed that most patients want to know study results and 83% agreed that patients should be offered this information. Benefits of routinely offering results to patients include: courtesy to patients, improve patient understanding of trials, improve patient satisfaction with care, and increase accrual to trials. Concerns about offering results to patients include: patients might not understand, entail too much money and time, patients can't act on this knowledge, negative emotional effects on clinicians and patients. 78% indicated willingness to offer results to patients, with 30% indicating they were less willing to do it for phase I/II compared with phase III studies. 9% would be less likely to enroll patients on trials if providing results was obligated, while 33% believe a policy obligating is a bad idea. Oncology nurses play an essential role in educating and counseling patients regarding clinical trials participation. Nurses need to be aware of their own attitudes and consider the implications if policies are put into place. If mandated, resources will be needed to account for the additional time required to appropriately provide this information to patients.

## 60

**IMPLEMENTING A PHASE I TRIAL AT A CLINICAL RESEARCH CENTER: DEFINING ONCOLOGY NURSING ROLES.** Kathleen Castro, RN, MS, AOCN®, National Institutes of Health Clinical Center, Bethesda, MD; and Rebecca Babb, RN, BSN, OCN®, National Cancer Institute, Bethesda, MD.

Phase I clinical trials are an essential component of the drug development process and are therefore a mechanism to expand the range of available cancer therapies. These trials require intense monitoring by the nursing team to determine toxicities and side effect profiles. By defining innovative methods for utilizing oncology nurses in phase I trials, centers can evaluate their nursing role structure and optimize study implementation processes.

Our center is unique in that all patients are enrolled on a clinical research trial. While it is our mission to provide information to the public on the research outcomes it is also important for us to discuss innovative methods of implementing research protocols. Our goal is to describe the model we used to delineate the Research Nurse and Clinical Nurse roles in a recent phase I trial.

We implemented a trial to determine the safety and dose-limiting toxicity of Interleukin-7 (CYT 99 007) in patients with malignancies refractory to conventional therapies. Oncology nurses served two roles

on the research team: Research Nurse and Clinical Nurse. The Research Nurse was responsible for protocol coordination and oversight. The role included educating clinical nursing staff, ensuring informed consent and participant education, determining eligibility, completing case report and adverse event forms, serving as a liaison with data managers and providing documentation to study sponsor. The Clinical Nurse implemented clinical care. Responsibilities were to reinforce study participant education, administering biotherapy agent, obtaining pharmacokinetic/research samples, monitoring for side effects, performing physical assessments and documenting in the medical record. Both roles were responsible for human subject protection and ongoing communication with the research team.

Defining the roles of oncology nurses in this manner proved to be an effective method of implementing a phase I research trial. The integrity of the protocol was maintained and the required data elements were documented and retrievable, thereby promoting our adherence to the reporting responsibilities prescribed by the study.

Oncology nurses play a pivotal role in drug development. Utilizing the nursing expertise and applying this model for role delineation may be an efficient and effective system change for Cancer Centers and Oncology Practices.

## 61

**DEVELOPMENT OF AN ONCOLOGY SPECIFIC CLINICAL RESEARCH CENTER.** Teresa Mazeika, RN, BSN, OCN®, and Jennifer Guglia, RN, BSN, OCN®, Dana-Farber Cancer Institute, Boston, MA.

Conducting Phase-1 clinical trials (Ph1CTs) in ambulatory oncology is challenging because they are complex and time intensive. They often require intensive monitoring and pharmacokinetic blood sample collection as frequently as every five-minutes. Oncology nurses provide the care and conduct the tests required during the Ph1CT. By necessity, the care needs of all the patients in a unit take precedence over the data collection needs of the Ph1CT making it difficult to complete the requirements of the trial. Innovative ways of managing Ph1CTs in the ambulatory setting are needed.

The purpose of this abstract is to describe the development of an ambulatory oncology clinical research center (CRC).

Because nurses did not have dedicated time to review the intricate details of the protocol, and pharmacokinetic draws were being missed, the Dana-Farber Cancer Institute (DFCI) opened a CRC. The unit is open 13-hours/day and there are 35-50 Ph1CTs being managed at one time. The nurse-patient ratio is 1:RN to 2:patients; more complex trials may require a 1:1 staffing ratio. Oncology nurses have developed an expertise in the care of patients during Ph1CT. These nurses are skilled in chemotherapy-administration as well as patient-assessment, time-management, and attention-to-detail. Due to the risk of serious side effects, from novel medications, each nurse is ACLS-certified. The nurses work out a pharmacokinetic blood draw schedule for each patient, to coincide with a clinical assistant/runner that transports the specimens to the lab. Weekly multidisciplinary meetings are held with the nursing staff and research teams to discuss patients and operational issues.

Enrollment to these trials has been steady from 596 in 2003 to 598 in 2005. Significant improvement has been seen in the accuracy of data collection. In 2003, research blood samples were often missed on a daily basis. Since opening the CRC, blood samples are missed on average once a month.

Accurate data collection is crucial to the development of new agents to treat cancer. Because oncology nurses are integral in this process, providing nurses with the necessary resources in a designated CRC significantly improves their ability to meet the needs of patients and the research needs of Ph1CTs.

## 62

**AUTOMATING A NURSING PROCESS: HOW TO DESIGN A COMPUTER TOOL TO VERIFY ELIGIBILITY FOR CLINICAL TRIALS.** Vilma Lopez, RN, MSN, OCN®, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Enrolling eligible patients in Clinical Trials is one of the main roles of the Clinical Trials Nurse. Non-eligible subjects are not evaluable for the final protocol analysis. Protocol managers in our data management center verify eligibility for all subjects enrolled in our trials. The review

process requires extensive time for auditing medical history, tests results and demographics to ensure that the subject meets the criteria.

The purpose was to design a commonly available computer tool to simplify the process, facilitate data entry, improve data quality, and cut costs without purchasing specialized software.

To standardize the process I first review the protocol eligibility criteria and the registration eligibility checklist to determine documents required to verify criteria. Next, I determine time frames as stipulated in the protocol, institutional standards or Good Clinical Practice to establish date parameters; analyze each criterion and separate it into its lowest level components; establish the type of answers acceptable for each component: simple, multiple choice, hierarchical, etc; set the hierarchy, if necessary, and validation parameters for numerical values.

A spreadsheet is prepared to collect data. The spreadsheet groups subjects based on their eligibility status: unverified, eligible or non-eligible.

Unverified are subjects with missing documents or data. We query the individuals responsible for registration to complete the information. Eligible subjects have complete documents, within the appropriate time frame, and meet all criteria; 100% completion is required. Non-eligible subjects have failed to meet criteria for varied reasons, i.e. tests out of time frame, incomplete testing, out-of-range values, discrepancies between received documents and the eligibility checklist. We query for more data, alternate documents or reconciliation. The spreadsheet can build automated queries.

The expected outcome is to decrease the processing time and rate of errors in verifying eligibility. We have compared results from the current manual process and the automated one to validate its accuracy. After validation, it might be widely used as standard practice for determining eligibility.

The tool is easy to use, may be adjusted for different protocols and can be replicated or adapted for use in other oncology settings.

## 63

**SATURDAY CLINIC: AN ALTERNATIVE FOR MEETING PATIENTS' NEEDS.** Kathleen Shannon-McAdams, RN, MSN, ANP-C, GNP-C, Natasha McClure, RN, BSN, OCN®, and Eulivia Austria, RN, BS, OCN®, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Ambulatory care is a rapidly increasing practice in which the delivery of care is led by the registered nurse and Nurse Practitioners. Ambulatory care nursing has evolved into a specialty whose practice setting emphasizes health promotion, disease prevention, and patient satisfaction.

Our patient population receives aggressive chemotherapy treatments that require close out patient monitoring of their nadir and other related side effects. Our patients may need to be sent to the emergency room (ER) on weekends for lab review, fluid/electrolyte replacements, blood transfusions, and/or fever. Most patients sent to the ER for lab review and symptom management over the weekend complained of extended wait times and gaps in appointments. Patients complained of long non-ending days in the outpatient hospital areas. They voiced a need for clinics to conform and be more accommodating to their needs.

A team of clinic nurses met to discuss these service needs to improve our patient care. We formed a Saturday Fast Track Clinic to provide swift assessment and evaluation followed by simple, but much needed interventions.

In the Saturday fast track patients' electrolytes are evaluated and quickly replaced, blood or platelets are secured, and fevers are evaluated. A patient laughing called this clinic "one stop shopping".

We are currently experiencing a threefold effect. First, patient satisfaction has increased tremendously because patients are assessed and evaluated within fifteen minutes. Secondly, providing this service on Saturday decants the emergency room of non-urgent patients, allowing more capacity for the acutely ill patient. Thirdly, Saturday Clinic improves quality of life by providing continuity of care and allowing patients to spend less time in the hospital.

Oncology nurses are directly responsible for providing management of patient's physical and emotional needs. Development of this fast track shows a strong sense of patient care. This presentation will cover the development, design, and outcomes of this project.

## 64

**RETAINING NEW ONCOLOGY NURSES: OUTCOMES OF A UNIT-BASED SUPPORT GROUP.** Patti Murray, RN, BSN, James P. Wilmot Cancer Center,

Rochester, NY; and Melissa Nash, RN, BSN, OCN®, and Shannon Phillips, MS, RN, AOCNS, James P. Wilmot Cancer Center, University of Rochester Medical Center, Rochester, NY.

The Oncology Nursing Society (ONS) and other national organizations predict that the current nursing shortage will intensify over the next 10-15 years, which has serious implications for the quality of care delivered to cancer patients. The impending increase in the nursing shortage makes the retention of current oncology nurses an essential goal for nursing leaders and administrators.

The purpose of this project is to evaluate a support group designed to increase retention and satisfaction of nurses hired to an inpatient adult medical oncology unit in a large academic medical center in Western New York/Finger Lakes Region.

A support group for all new hires is held every 6-8 weeks for 1 hour. Staff remain in the group for 18 months. The group sessions are lead by the unit nurse manager, and are scheduled at a time that maximizes participation. The group discusses issues or concerns they encounter during the orientation process, as well as specific educational topics based on unit population. These conversations are confidential and staff are encouraged to speak honestly about their perceptions. The group's recommendations for improvement are considered by unit and service leadership.

Since the implementation of the support group in 1998, unit attrition has decreased 63%. Many of the support group ideas and suggestions have been implemented, including an annual memorial service, a mentoring program, and an oncology-specific orientation day. The hospital Department of Nursing has adopted the support group concept for all new hires. Comments and evaluation of the support group by recent participants suggest the groups are contributing to the improved retention figures seen.

Retaining oncology nurses has wide implications for both quality patient care and cost reduction. On average, orienting a nurse to an inpatient unit costs approximately \$46,000, so retaining nurses once they are fully competent is a tremendous cost-savings to the institution. Providing new nurses with a confidential outlet for questions and concerns during orientation is a simple and effective way to decrease attrition.

## 65

**REVITALIZING AN APPROACH TO SUPPORTING NEW GRADUATES: BUILDING CONFIDENCE AND COMFORT.** Mary Reardon, RN, MS, CNA, OCN®, and Sheila Ferrall, RN, MS, AOCN®, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

Transitioning from the role of student to that of professional nurse is exciting, yet challenging, even under the best circumstances. Transitioning from student nurse directly into a specialty, such as oncology, adds another layer of complexity to the experience. We have always acknowledged the importance of helping recent graduates transition into their new roles. To better compliment our 3-month long preceptorship, we recognized the need to revitalize the overall program. Recent graduates need support beyond that an experienced preceptor can offer, and we endeavored to create a program to sustain them through this transition.

The purpose of this program is to assist in the role transition from nursing student to beginning oncology nurse at an NCI-Comprehensive Cancer Center.

To provide more timely intervention for new nurses, the decision was made to increase the frequency of the didactic program from once to twice yearly. The didactic program was lengthened to two full days, with monthly lunchtime meetings for an additional time period thereafter. Clinical nurse specialists, nurse managers and past participants identified appropriate topics. The agenda included an eclectic group of presentations ranging from those designed specifically to aid in role issues such as reality shock and stress management, to professional topics like shared-governance, to oncology focused content, such as venous access devices and end-of-life communication. Presenters included experienced staff nurses as well as our Chief Nursing Officer. Emphasis was placed on developing resources and sharing individual experiences.

The didactic program was evaluated using a Likert-type scale of 1-5 with 1 representing poor and 5 excellent. Overall scores were 4.5 and 5 for respective days. Comments included statements like "has built my confidence as a new nurse and helped me relax knowing feelings are normal" and "I'm so grateful for this course, it really helped me."

With increasing demand for nurses, slow growth in supply, and aging of the workforce, protecting the investment in new nurses is paramount for healthcare institutions. Nurturing new graduates helps to ensure a steady supply of oncology nurses. Programs, such as the one described, also serve to foster a connectedness with other new nurses.

## 66

**DINING-ON-DEMAND: AN INPATIENT NURSING AND NUTRITION INITIATIVE.** Melinda Kiser, RN, MSN, OCN®, James Cancer Hospital at Ohio State University, Columbus, OH; and Liz Weinandy, RD, LD, Ohio State University, Columbus, OH.

Oncology patients often struggle with proper nutrition due to changes in appetite and difficulty with oral intake. Being in the hospital setting adds to these eating challenges. A new, modified room service meal delivery model, Dining-On-Demand (DOD), was developed to allow patients to decide when and what they want to eat.

The purpose of this poster is to present the development and outcomes and the DOD model to improve patient satisfaction and nutrition for oncology patients while in the hospital setting. The outcomes that were measured were patient and staff satisfaction, missed meals and time to tray delivery. The learning objective will be for the reader to identify a new approach to meal service for oncology patients.

This model uses advance meal selection through handheld computers with innovative cold pre-plating of patient meal selections. As patients are ready to eat, nursing requests the trays through a custom-built web interface. Nutrition staff cook the food in a Rational(TM) self cooking center and deliver them to the patients within 30 minutes of request. The custom web interface has multiple features to track patient requests and missed meals.

A collaborative effort between many hospital departments enabled all of these initiatives. A nursing-nutrition partnership was established with a joint work group to develop DOD. Information Services developed a new computer application specific to DOD, the Marketing Department created educational flyers and all applicable staff were trained. Ongoing follow-up was accomplished to measure outcomes.

The trial resulted in 76% of the patients (n=80) preferring DOD compared to the traditional set meal time model and observed patient oral intake has increased. Nutrition staff have also reported increased job satisfaction since they had more time to spend with the patients. Overall patient satisfaction scores and dietary satisfaction scores were also improved since this new initiative began. Therefore, this model has shown to be effective in assisting oncology patients with their dietary needs while in the hospital setting.

Implications for nursing practice are to advocate/develop for a DOD model to improve oncology patient satisfaction and nutrition efforts in the hospital environment.

## 67

**"LEARN, DON'T BURN": EDUCATION TO PROMOTE SUN-SAFETY BEHAVIORS IN ELEMENTARY AND MIDDLE SCHOOLS.** Annette Lindal, RN, OCN®, Via Christi Outreach Department, Wichita, KS.

Approximately 65-90% of melanomas are caused by ultraviolet (UV) radiation. More than one-half of a person's lifetime exposure to UV rays occurs during childhood and adolescence. Persons with a history of one or more blistering sunburns before the age of 18 are two times more likely to develop melanoma than those who do not have such exposure. The practice of sun-safe behaviors by school populations can be influenced by as little as 1 hour of skin cancer prevention education per year. The Cancer Outreach Coordinator designed a program alerting school personnel of the key role they play in the education and modeling of sun-protective behaviors.

The purpose of the "Learn, Don't Burn" program was to promote sun-safe behaviors in the school population of USD #259.

The professional education component of the project included a skin cancer prevention class for school nurses. Participants received toolkits for their schools including posters, bookmarks, pamphlets, resource curriculum, UV-indicator cards, and "Guidelines for School Programs to Prevent Skin Cancer" from the Center for Disease Control. Students were invited to participate in a poster contest illustrating a sun-safe behavior. Winning posters were displayed at the annual city-wide free skin cancer screening clinic. Poster designs were reproduced on tee shirts for each winner and his/her class.

A total of 13,762 children (28% of the USD #259 population) directly benefited from this program. Data was collected from a pre- and post-survey of the school nurses. Pre-program survey reported an average of 1.03 skin cancer prevention educational tools/RN used; post-program = 3.52 tools/RN. Modeling of sun-protective behaviors: pre-program=1.29/RN; post program = 2.0/RN. Importance of skin cancer prevention education on a scale of 0-5 with 5 being very important: pre-program=3.67; post-program=4.7. Nurses cited important strengths of the program were organization, free materials, and curriculum.

The oncology nurse is a content expert in cancer prevention for the development of a sun-protective education module for school populations. The data suggests that by attending the education program school nurses increased their use of educational tools, increased their protective behaviors, and placed greater value on skin cancer prevention education.

## 68

**COMBINING CANCER SCREENING ASSESSMENT WITH HEART RISK AND CHOLESTEROL TESTING.** Nora Katurakes, RN, MSN, OCN®, Christiana Care Health Services-Helen F. Graham Cancer Center, Wilmington, DE.

The American Heart Association, American Cancer Society and American Diabetes Association have recommended that common risk factors are associated with heart disease, diabetes, hypertension and cancer. Individuals are not aware of the common risk factors, the connection between the disease conditions, and interventions that can lower their risk and prevent these diseases. American Cancer Society reports that nearly 75% of all cancers are preventable. Primary and secondary prevention programs are needed in the community to raise awareness, provide access to services and assist individuals with lifestyles changes based on behavior theory. Innovative strategies are needed to reach diverse and vulnerable communities and assist with changing behaviors to create healthier communities.

The purpose of this project was to design and implement a global approach for a community-based screening program that combined cancer awareness and screenings with risk factor assessment and clinical testing for chronic disease (cholesterol, sugar and blood pressure). This project's aim was to reach vulnerable individuals and assist with cancer screenings and services.

The Manager of the Community Health Outreach and Education program at Christiana Care Health System in Delaware, an oncology nurse, convened a team that met monthly to develop the Chronic Disease Screening Program funded by the Delaware Division of Public Health. Components include processes for registration and screening, a computerized heart health assessment (Wellscore), clinical measurements (cholesterol, sugar and blood pressure), education materials, a 5-item questionnaire to assess cancer screening needs, a participant satisfaction survey and followup outcome tracking letter. Each participant screened receives written and verbal instructions about healthy lifestyle recommendations and a plan for appropriate cancer screening.

This program, currently in its third year, reaches over 1300 participants annually. Program evaluation measures include 1) participant satisfaction survey and Spanish focus groups 2) demographic data of participants 3) referrals for cancer screenings, physician services and financial assistance and 4) outcomes reported through the followup outcome tracking letters.

The program design has been successful and provided a strategy that may be used in other communities to educate and assist vulnerable individuals with cancer screening services. Oncology nurses play a role in developing innovative programs.

## 69

**CANCER AND DIABETES, AN INCREASING COMMON COMBINATION: IMPROVING KNOWLEDGE AMONG ONCOLOGY NURSES.** Mikaela Olsen, RN, MS, OCN®, Johns Hopkins Hospital, Baltimore, MD.

In the United States today 20.8 million people have diabetes. Approximately one-third of those cases are undiagnosed today (ADA, 2005). Diabetes is an incurable chronic disease characterized by high levels of blood glucose resulting from inadequate insulin production or action. Like cancer, most cases of diabetes do not discriminate between ages, genders or ethnicities. Ironically while 1 in 3 Americans are estimated to develop cancer in their lifetime this same statistic exists for diabetes. The likelihood that nurses will care for cancer patients with diabetes is real and predicted to increase.



Oncology nurses face many challenges keeping abreast of the most current cancer treatments within their own specialties. Caring for cancer patients who also have diabetes can complicate the plan. Diabetes care has revolutionized in the past decade with the development of many new types of insulins all with varying actions, onset, and monitoring criteria. Oncology nurses need to be apprised of the differences between Type I, Type II and steroid-induced diabetes, as well as new advances, in order to provide optimum care for these patients. A push toward earlier treatment of Type II diabetes, with a focus on tight glucose control in all types, places a great responsibility on nurses to ensure safety.

A comprehensive review of diabetes, current management strategies, a thorough assessment program and important considerations in the patient with cancer will be demonstrated. This educational presentation will utilize case studies to emphasize relevant nursing care and safety concerns in the oncology patient with diabetes.

Thorough screening of all oncology patients for the presence of diabetes is essential. Through increased education oncology nurses can become more knowledgeable about this disease and the special considerations necessary to help minimize complications during and after their cancer treatment.

Each day approximately 4,000 people are diagnosed with diabetes. In 2005, 1.5 million new cases of diabetes were diagnosed in people 20 years and older. Type II diabetes is becoming increasingly more common in children and adults. Adult and pediatric oncology nurses must commit themselves to understanding this growing epidemic and how it affects the care of oncology patients.

## 70

**A PROACTIVE APPROACH TO PREVENTING CONSTIPATION IN POST-OPERATIVE ONCOLOGY PULMONARY RESECTION PATIENTS.** Kai Brown, RN, BSN, Annette Bisanz, RN, MPH, Garrett Walsh, MD, Ara Vaporciyan, MD, and Wayne Hofstetter, MD, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Optimal patient care and efficient use of health-care resources requires a detailed analysis of all aspects of a patient's hospital stay. Prolonged ileus and constipation can result in a significant increase in the hospital length of stay and increased operative morbidity in patients undergoing pulmonary resections for thoracic malignancies. Patients routinely receive perioperative opiates by an intravenous, epidural or oral routes which often is a major factor leading to diminished bowel function. Our current pathways utilize docusate only as the scheduled drug given to prevent constipation.

While we have recognized that reduced bowel function is a recurring problem. We reviewed the charts of 82 consecutive patients undergoing pulmonary resection. We found that 63% of patients needed additional medications more than docusate to treat constipation.

We have, therefore developed a structured bowel management care plan that uses stimulant cathartics to prophylactically treat and avoid constipation in this patient population. This new standard outlines day-to-day pharmacologic interventions, beginning postoperative day one until the day of discharge. We educated the staff about the new plan by using a Power Point and poster presentation, and an algorithm was developed to help staff implement the new care plan.

From January to March 2006, we will treat 100 patients using the new care plan and compare results to the previously studied cohort of 82 patients. Patient charts will be reviewed for the following information: (1) Did patients require any additional bowel stimulant medications, other than the scheduled stimulant cathartics? (2) Did the staff administer the medications as outlined in the algorithm? (3) Was the length of hospitalization affected by this change compared to our baseline population studied? The overall goal of the new care plan is to decrease the incidence of constipation from 63% to at least 30%.

This performance-improvement project demonstrates the role of a staff oncology nurse in making positive changes to enhance the quality of patient care.

## 71

**IMPLEMENTATION OF AN ONCOLOGY CONTINUING EDUCATION COURSE FOR NURSES IN NICARAGUA.** Mary Ann Yancey, RN, MSN, AOCN®, Shady Grove Adventist Hospital, Rockville, MD.

Many Nicaraguan nurses lack necessary information needed when caring for patients receiving chemotherapy. They have not received edu-

cation regarding safe handling or administration of chemotherapy. They also lack the information and resources to properly inform their patients about the potential side effects of chemotherapy and management of those side effects.

In an effort to improve understanding among Nicaraguan nurses caring for cancer patients, an inexpensive educational program was developed. This education program, funded by a generous grant from the ONS foundation, consists of a DVD demonstrating safe handling and administration of chemotherapy, a binder providing an overview of potential side effects of chemotherapy as well as management of side effects and a lecture reinforcing those materials, all in Spanish.

In January 2005 twenty-nine Nicaraguan nurses from three hospitals and one school of nursing took part in a one-day class. At the beginning of the class, the nurses took a 30 question test that included questions related to safety in the handling and administration of chemotherapy, as well as potential side effects of chemotherapy. After completing the test, a 30-minute instructional video was shown regarding safe handling and administration of chemotherapy. A review of potential side effects of chemotherapy, management of side effects, and case studies was provided. The nurses then took a post-test, which consisted of the same 30 questions as the pre-test.

The nurses showed a highly significant improvement in their understanding of administration and side effects of chemotherapy. The difference between the pre-test and post-test results demonstrated a 54% improvement in the lowest score, a 7 % improvement of the highest score, with a mean improvement of 24%.

Evidence supports that Nicaraguan nurse's lack necessary information needed when caring for patients receiving chemotherapy. Oncology nurses in the United States have the ability to assist oncology nurses in Nicaragua (and possibly other developing countries) by providing the necessary information on safe handling and patient education related to chemotherapy. The educational program developed was clearly successful in improving Nicaraguan nurse's knowledge about chemotherapy.

## 72

**CULTURAL BELIEFS AND ATTITUDES OF AFRICAN AMERICAN PROSTATE CANCER SURVIVORS.** Randy Jones, PhD, RN, Ann Taylor, EdD, RN, FAAN, Cheryl Bourguignon, PhD, RN, Richard Steeves, PhD, FNP, FAAN, Dan Theodorescu, MD, PhD, and Kerry Kilbridge, MD, MPH, University of Virginia, Charlottesville, VA.

Cultural beliefs play a major role in the stage of prostate cancer at which African Americans are at higher risk to be diagnosed. These beliefs may assist in the decision for acceptable treatments. To provide culturally sensitive care, healthcare professionals must be aware of these beliefs.

This study examines the psychosocial cultural beliefs and attitudes of African American prostate cancer survivors toward their cancer diagnosis and treatment decision-making. How these beliefs and attitudes may or may not have influenced their health decision-making process were explored also.

This study used a mixed methods design, which the analysis of the qualitative data utilized the hermeneutic/phenomenological approach to explore the "lived experiences" of the participants. The "lived experiences" related to the participants' views on prostate cancer.

African American men (N=14) in rural Virginia, who had been diagnosed and treated for prostate cancer, were individually interviewed. Semi-structured interviews explored health status, demographics, prostate knowledge, literacy skills, healthcare providers and family interactions, prostate myths and religious beliefs. Data collection was terminated upon moment of data saturation. Data were analyzed using both qualitative and descriptive quantitative methods.

Half of the participants (N=7) chose to have a prostatectomy as their primary treatment. Three main themes were revealed from study findings: "spiritual needs are important to health," "trust in healthcare providers is necessary," and "how men decide on what to believe." Prayer was used by all 14 participants as a coping mechanism during cancer treatment. Each of the participants expressed the belief that God works through healthcare providers to provide appropriate healthcare treatments, and that spirituality is an important part of their lives. However, participants articulated that they would not forego medical treatment and trust only in God to treat their prostate cancer. Participants' viewpoint about health, treatment decision-making, and the healthcare system was determined mainly by their cultural beliefs and previous healthcare experiences.

Study findings may provide understanding on how African Americans decide what to believe or who to trust to improve their health. Research results may guide development of future culturally sensitive educational decision aids or programs to be used during patient and healthcare provider interaction.

## 73

**CULTURAL BELIEFS CONTRIBUTING TO LATE-STAGE DIAGNOSIS OF BREAST CANCER IN AFRICAN-AMERICAN, LATINA, AND CAUCASIAN WOMEN.** Carol Ferrans, PhD, RN, FAAN, University of Illinois at Chicago, Chicago, IL; Barbara Akpan, RN, and Margaret Davis, MS, RN, Healthcare Consortium of Illinois, Chicago, IL; Aida Giachello, PhD, Timothy Johnson, PhD, Virginia Martinez, JD, and Jennifer Parsons, MA, University of Illinois at Chicago, Chicago, IL; Dinah Ramirez, RN, Healthy South Chicago, Chicago, IL; and Catalina Ramos-Hernandez, MD, Richard Warnecke, PhD, and Marilyn Willis, MS, RN, University of Illinois at Chicago, Chicago, IL.

Both Hispanic and African American women have higher odds ratios for diagnosis with later-stage breast cancer than Caucasian women. Women commonly delay in seeking medical care for three or more months after self-discovery of a breast symptom, and cultural factors play an important role.

The purpose of this study was to identify cultural beliefs contributing to the diagnosis of late-stage breast cancer in African-American and Latina women.

An inductive approach was used to identify cultural beliefs, using Strauss and Corbin's (1990) coding techniques.

First, cultural beliefs were identified, using a community participatory model to conduct four focus groups with Latinas (in Spanish and in English), African-American, and Caucasian women. Second, interviews with 117 women demonstrated that these beliefs were commonly held.

Cultural beliefs contributing to non-participation in mammography and delay in seeking medical evaluation after finding a breast symptom were identified. Four categories of cultural beliefs were identified (and compared) among the three ethnic groups: (1) incorrect ideas about breast lumps; (2) use of self-help techniques; (3) faith-based beliefs; (4) futility of treatment. Differences in sources of health information also were identified among the groups, with the African-American and Latina women depending to a greater extent on social networks, rather than health care professionals and text-based media. Another difference was the use of stories to convey information, which was more prevalent in the African-American and Latina groups. In the stories, the strongest beliefs were based on experiences of people they knew personally. In addition, it was found that the health care system serving these women is ill equipped to handle increased demand. Findings from each group will be incorporated into community-based interventions to promote early detection of breast cancer, both by addressing cultural beliefs and by advocating for increased capacity for diagnostic and screening mammography. The use of a community participatory model resulted in richer data with greater cultural saliency, through the active collaboration of community partners in all phases of the study.

## 74

**THE USE OF A TOOL TO ASSESS SYMPTOMS IN NON ENGLISH SPEAKING PATIENTS.** Susan Robertson, RN, MS, OCN®, and Elaine Heywood, Royal Free Hampstead Trust, London, England.

In the palliative care team many referrals are received for expert advice in controlling patients' symptoms of pain and nausea at various stages of their journey with cancer. These patients come from a vast number of ethnic origins and many do not speak English. As the majority of health professionals in this institution only speak English caring for and assessing these patients without the use of an interpreter can be very problematic. This is especially true when seeing a patient after commencing a protocol for symptom management and questioning efficiency. Many patients risk ineffective titration of drugs secondary to a language barrier. This creates frustration for the patients, their family as well as the nursing staff.

To facilitate better communication and optimal care in a large culturally diverse patient population and to allow nurses to better use evidence based skills to titrate medications, suggest additional treatment and to refer those patients that needed counseling and further interpreter services.

An assessment tool consisting of 15 questions pertinent to pain, nausea, vomiting, eating, sleeping and depression were translated onto

a form using yes/no answers. This tool could be used daily for ongoing assessment of the effectiveness of interventions used. Nurses felt comfortable in knowing outcomes to create their daily care plan and to communicate their findings to the multidisciplinary team. The patient was given the form with a pencil to circle the yes/no answers. The form had the English translation below each question so enabling the nurse to clearly understand the patient's response.

Patients were able to achieve better symptom management as it allowed better titration and optimization of analgesia and other pertinent medications. Patients and families felt more empowered with their care, as it is very difficult being cared for by someone that doesn't speak the same language. Nurses voiced increased confidence in their skills and care and communicated with other team members their satisfaction.

The implications of delivering the optimal care is vital to the core of oncology nursing and the use of a simple tool that can be used as often as necessary to assess the patients symptoms to deliver this care has proved invaluable.

## 75

**BREAKING DOWN BARRIERS TO ONCOLOGY CERTIFICATION: ONE HOSPITAL'S STORY.** Erin Shonkwiler, RN, MSN, AOCN®, Saint Luke's Cancer Institute, Kansas City, MO.

Oncology certification is a reflection of excellence and quality of cancer care. It is a critical aspect of professional development for oncology nurses and promotes lifelong learning and commitment. Certification is increasingly becoming a community standard among institutions as well as consumers.

Barriers to attaining certification include: lack of mentorship, knowledge of certification benefits, adequate learning tools and opportunities, value by the individual and institution, financial resources and, of course, time constraints.

The purpose of this project is to promote oncology certification on our institution by creating a process that would facilitate certification for oncology nurses.

One of the most prevalent barriers was lack of financial resources. Our administration decided to reimburse for the costs of the test and a one-year membership to ONS, regardless of whether the nurse passed or failed the test. Each nurse also attended a two-day intensive oncology review course, with the cost of the class and their time paid by our institution. As the oncology CNS, I provided one-on-one mentorship to each individual on the testing process, assessing their strengths and weaknesses according to the test blueprint, developing a study plan and reviewing test questions. Nurses were provided with oncology review books and access to online resources as well as the core curriculum and study guide. The institution also promoted the value of certification by presenting each nurse with a certification pin during a ceremony during nurse's week and putting up pictures of certified nurses in patient care areas. We are also planning to have an annual recognition celebration for all oncology certified nurses.

This process was developed in 2004 and since then 18 nurses have taken the certification exam with 17 successfully passing. This represents almost 30% of our nurses with a total of almost 60% of nurses currently having their oncology certification.

Oncology certification is a mark of excellence and makes a difference in the lives and care of patients, families, employers, nurses and the public. By assuring individual and institutional support and value, we have successfully implemented a process to break down these common barriers.

## 76

**CONGRUENT VALUES, SHARED GOALS: THE MAGNET RECOGNITION PROGRAM (MRP) AND ONCOLOGY NURSING.** Jane Shivan, RN, MScN, AOCN®, the Institute for Johns Hopkins Nursing, Baltimore, MD.

The American Nurses Credentialing Center (ANCC) Magnet Recognition Program (MRP) measures the quality of nursing practice and organization against standards derived from a growing body of nursing research. The process of applying for Magnet Recognition affirms the values held by oncology nurses and offers an opportunity to reflect on our strengths and successes.

The MRP provides a dynamic, context-sensitive framework of evidence-based standards that validates excellence in nursing organization and practice. It can be used as a conceptual model to guide positive changes in unit organization, management structure, and nursing practice.

Working toward Magnet Recognition includes assessing and analyzing nursing practice and the workplace environment, gathering exemplars and writing a narrative, and preparing the institution for a site visit. The role of the Magnet Project Coordinator (MPC) at this academic medical center also encompassed interpreting the standards and forces of magnetism for leadership and staff, and supporting strategic planning activities using those principles. As an oncology nurse, the MPC was uniquely prepared for this role. The needs of our patients for holistic care along a continuum that includes ambulatory, acute, critical and palliative care fosters our professional growth as expert nurses with evidence-based practice. The special nature of survivorship and the need for preventive programs pushes us to look outward to our communities. Our specialized practice supports nursing autonomy within a collegial interdisciplinary framework. These concepts, familiar to us as oncology nurses, are well described in the MRP as essential to excellent nursing practice and quality patient outcomes. Working with leadership and staff across the institution, the MPC has a rare opportunity to describe, expand, and codify these concepts.

Commitment to the principles of the MRP is an ongoing journey requiring a clear understanding of its evidence-based standards. Success can be measured by outcomes such as nurse and patient satisfaction, and by trending and benchmarking nurse-sensitive quality indicators.

Evidence-based standards such as those described by the MRP can be used to guide and implement changes in nursing practice and organization whether or not an institution is pursuing Magnet. Their congruence with oncology nursing practice gives them special value to our nurses and patients.

## 77

**NOVICE TO EXPERT: GUIDING NEW ONCOLOGY NURSES ON THE JOURNEY.** Paula Muehlbauer, RN, MSN, OCN®, Kathleen Castro, RN, MSN, AOCN®, Nonniekaye Shelburne, RN, MSN, AOCN®, Georgie Cusack, RN, MSN, AOCN®, Sandra Phelps, RN, MSN, and Myra Woolery, RN, MSN, CPON®, National Institutes of Health, Bethesda, MD.

Oncology patients are receiving a wider array of treatments than ever before. Additionally, the oncology population is transcending to non-oncology units. Combination modalities have increased the complexity of side effect management and care. Trends across the country indicate less experienced nurses are caring for cancer patients. Nurses need to be provided with a knowledge base to administer safe, comprehensive care.

The purpose of this program was to provide an efficient method to increase nurses' knowledge about oncology issues including pathophysiology, treatment, symptom management, and palliative care. Our institution's approach had been to provide some education in didactic classes with unit-based preceptors teaching the rest. Observations by the oncology Clinical Nurse Specialists found orientation did not allow time to develop a comprehensive oncology knowledge base. The goal was to provide new-to-oncology nurses with a standardized program to increase their skill set and confidence when caring for cancer patients.

We assessed, implemented, evaluated and revised basic oncology education. Consultation with education specialists resulted in development of a program incorporating interactive learning activities with didactic education. The outcome has been a comprehensive weekly series integrating topics from the ONS education blueprint and adult learning principles.

Course evaluations have improved with this new method. Feedback from nurse managers and participants has been positive. The series has been revamped for 2006 after reviewing evaluations from 2005. Additional self-learning activities have been added including the use of existing games from ONS such as "Action Trivia" for chemotherapy.

A program that incorporates self-directed learning, didactic and class interaction results in a skilled, more confident oncology nurse. Offering this class weekly for eight consecutive weeks promotes building of concepts. It ensures all oncology nurses receive consistent cancer related education and allows the preceptors to provide unit based orientation.

## 78

**SUSTAINING A SUCCESSFUL EDUCATIONAL CONSORTIUM: THE PUGET SOUND ONCOLOGY NURSING EDUCATION COOPERATIVE.** Mikhaila Wickline, RN, MN, AOCN®, Seattle Cancer Care Alliance, Seattle, WA.

Oncology nursing relies upon knowledge of cancer pathophysiology, treatment modalities and symptom management. Providing didactic

education to nurses new to oncology can be challenging. The consortium model has gained popularity as individual institutions are realizing the cost-effectiveness of utilizing the combined expertise, time and resources of multiple institutions to provide staff education. Fourteen nursing leaders formed the Puget Sound Oncology Nursing Education Cooperative (PSONEC) in 1998 to address basic oncology nursing education. The group has worked together over the past eight years to execute the Fundamentals of Oncology Nursing course 13 times.

The primary purpose of the PSONEC is to offer the Fundamentals of Oncology Nursing course. To accomplish this effort, the cooperative has relied upon a structured program for ensuring member commitment and shared labor.

Current membership includes representatives from area hospitals, clinics and industry. Members sign a "Letter of Agreement" which outlines membership requirements and benefits of membership. The delegate attends a minimum of 75% of Advisory Committee meetings, provides two "major services" (such as hosting the course at their institution, managing registration and/or providing or sponsoring a lecture for the course) and attends a minimum of 4 hours of the 32-hour course. Member institutions may send nurses to the course without charge.

All 17 current members are active in ensuring the success of the cooperative's biannual course and report devoting an average of 8.5 hours per month to cooperative duties. The cooperative provides: 1) sharing of expertise of oncology advanced practice nurses, 2) a reduction of duplicate efforts, 3) a community standard for oncology education, 4) cost-effectiveness, 5) broader access to quality education and 6) networking opportunities.

The PSONEC is a successful model for delivering basic oncology education due to the commitment of its membership and the structure of the group. In light of the current cost containment activities affecting all health care institutions, an effort to share oncology education resources, including educators, materials and support services, is advantageous. This model could be adapted for use in other communities where there is a desire to increase the quality and decrease the cost of basic oncology nursing education.

## 79

**ABBREVIATED INFUSION RITUXIMAB: LESSONS LEARNED AND WAYS FORWARD.** Tracy Nagy, RN, BScN, MN, Princess Margaret Hospital, Toronto, Canada.

The anti-CD20+ monoclonal antibody rituximab is widely used in the treatment of lymphomas. Initially, a prolonged infusion schedule was recommended because of the potential for serious infusion reactions with the first dose. Expansion of the indications for use of rituximab has implications for timely scheduling of treatment, patient satisfaction and nursing workload. Recent data have demonstrated safety with an abbreviated infusion schedule over 90 minutes or less. The infusion practice differs across oncology units in Ontario. Evaluation of the implementation of this practice at our centre reveals that practice is influenced by nurses' experience, knowledge, preferences and fears.

To discuss the problems associated with abbreviated rituximab infusion and the subsequent development of practical tools to support nurses with this practice change. As a teaching centre, our mandate is to support oncology nursing practice both locally and in surrounding community oncology units.

Documentation of the experience with abbreviated infusion for 50 patients was reviewed. Clinical grading of reactions is inconsistent and subjective with narrative documentation making evaluation of reactions difficult. These observations influenced the implementation of formal nursing education and the development of tools to provide objective documentation of reactions and an algorithm to allow consistent treatment of infusion reactions. These tools were reviewed with nurses both locally and at surrounding oncology units.

Nursing education and documentation tools are critical to support changes in bedside nursing practice. Abbreviated infusion requires standardized grading of reactions. Lack of knowledge and fear of reactions are deterrents to more efficient infusion practice.

The use of rituximab in lymphoma is expanding. Educational support is an essential component to a successful change in policy and practice prior to implementation. The development of a documentation tool and algorithm provided a framework that supported more autonomous,



consistent and efficient practice at the bedside. The utilization of a toxicity-grading format provided more objective documentation and understanding of infusion reactions. Oncology nurses in surrounding units support the change in practice with the addition of educational support and useful documentation and decision tools.

## 80

**USING FAILURE MODE EFFECT ANALYSIS (FMEA) TO IMPROVE MEDICATION SAFETY.** Ellen Zupa, RN, MS, OCN®, CNA, Joanne Abbotoy, RN, BSN, and Dan Koester, RPh, Roswell Park Cancer Institute, Buffalo, NY.

Since the landmark Institute of Medicine 1999 report "To Err is Human: Building a Safer Health System" strategies to identify and adopt safe medication practices have been sought. Information technology is increasingly being implemented with the goal of improving the safety of medication processes.

In preparing for implementation of an electronic health record (EHR) including computerized prescriber order entry (CPOE) the Failure Mode Effects Analysis (FMEA) was used to determine the risks associated with current state processes and to design an electronic medication management process that reduced risk.

A multidisciplinary group used the FMEA process to proactively evaluate and reduce potential failures and harm while designing workflow processes to be implemented with the EMR.

Significant risk reduction was quantified and significant stakeholder acceptance of the proposed process changes was achieved.

This presentation will identify the value of using FMEA methodology for assessing potential failure points and patient safety issues in the high-risk patient environment of a comprehensive cancer center. This strategy could be adapted for use in any process that has the potential to impact patient safety. It was very effective in engaging oncology nurses in the process of designing workflow changes necessitated by increasing technology and to focus on the potential benefits the technology will bring to their practice.

## 81

**USING A TASK FORCE AS A MECHANISM FOR STANDARDIZING AND IMPROVING PRACTICE.** Rachel Behrendt, BA, RN, OCN®, Robert Wood Johnson University Hospital, New Brunswick, NJ.

Starting in December of 2004, it was acknowledged that chemotherapy administration practice varied greatly both within the four oncology units at Robert Wood Johnson University Hospital as well as the outpatient infusion area at the Cancer Institute of New Jersey. Because of the unique arrangement between the two facilities, and the fact that chemotherapy practicum experiences were conducted at CINJ, it was decided that we needed to come to consensus as to best practice regarding all facets of chemotherapy administration. A task force was created comprised of representation at all levels of nursing. Staff, head nurses, directors, pharmacists, and educators from each area were included.

Goals for the ad hoc committee included:

- 1) To establish open dialogue amongst nurses from all levels of oncology practice regarding chemotherapy administration, practice issues, and concerns.
- 2) To create consensus regarding chemotherapy administration, documentation, and education.
- 3) To create revised policies that reflect consensus.
- 4) To provide education to all chemotherapy nurses regarding practice standards established by the group.

As a result of the discussions held and the research these discussion fostered, major changes in chemotherapy practice were made. These include changes in: PPE, pump programming, institution of a medical surveillance plan, and more. The result of this task force's work has meant research into and adoption of best practices, policy development, and best of all, because of the broad range of committee participants, buy-in to the changes by all levels of oncology nursing.

The group was led by the Oncology Nurse Educator. Support from Nursing Administration was obtained, giving the group the authority to review all areas of chemotherapy nursing practice, come to consensus in accordance with ONS guidelines and any applicable regulatory agency requirements and revise policies accordingly. A survey covering all areas of administration (PPE, priming, pump programming, symptom assessment, documentation, patient teaching) was distributed to all committee members. The responses formed the basis for future discussions.

Overall, using this mechanism to review oncology practice has been enlightening, required patience as consensus was reached, and resulted in a more uniform and thus safer method for all aspect of chemotherapy care.

## 82

**EVIDENCE-BASED PRACTICE: A MODEL FOR ONCOLOGY NURSING.** Geri Wood, PhD, RN, FAAN, University of Texas M.D. Anderson Cancer Center and UTHSC School of Nursing, Houston, TX; JoAnn Mick, MSN, MBA, CNA, BC, RN, and Beverly Nelson, MS, RN, CNA, BC, University of Texas M.D. Anderson Cancer Center, Houston, TX; Terry Throckmorton, PhD, RN, University of Texas M.D. Anderson Cancer Center and UTHSC School of Nursing, Houston, TX; Sharon McLane, MBA, RN, Robert Massey, MSN, RN, and Karen Stepan, BS, RN, University of Texas M.D. Anderson Cancer Center, Houston, TX; and Anecita Fadol, MSN, RN, University of Texas M.D. Anderson Cancer Center and UTHSC School of Nursing, Houston, TX.

The domain of nursing research has grown in depth and breath producing a body of usable scientific knowledge for practice. Paralleling the growth of research has been the movement toward evidence based practice. Our institution implemented a practice model that incorporates evidence-based practice. This model challenges nurses to improve care in a dynamic, value-driven, results oriented environment, thus building practice on science.

The objective of developing an Evidence-Based Practice Model (EBPM) was to develop the nursing role institution-wide for improvement in patient care and evidenced-based outcomes. The model has multiple components focused on all levels of practice from clinical nurse to the advance practice nurse.

The EBPM has several components. The Evidence-Based Resource Unit Nurse (EB-RUN) component is a program designed to provide nurses on every unit (in-patient/outpatient) with the tools to take a leadership role in all aspects of evidence-based practice. Each EB-RUN has an advanced practice nurse Mentor who provides ongoing guidance and support. Prior to program participation each EB-RUN and Mentor participate in a two-day class that provides the underpinnings of the research process and evidence-based practice principles. Individual self-evaluations and unit assessment are completed by the EB-RUNS which serve as the basis for individual and unit goals. Mentors and EB-RUNS are provided support from doctoral prepared nurse researchers, research medical library staff and services, medical graphic and scientific publication resources, and interdisciplinary team support to assist with evidence based practice projects. Other model components include a website for communication and development of evidence tables. There is also an institution wide program "What is your evidence?" which provides targeted information on evidence-based interventions for nurses. Brown-bag lunch sessions provide opportunities for on-going education. Self-study modules are provided for independent development of database search skills and research methodology.

Qualitative and quantitative program evaluation includes: course evaluation, mentor feedback, projects initiated and completed, presentation and publication of projects. The goal is to support and develop nursing sensitive outcomes for an oncology cancer center.

Implications for oncology nursing practice are the development of a consensus of opinion on the best practices and it places the nurse in a collegial role with other nurses and health care professionals.

## 83

**FAMILY CAREGIVERS: HEALTH-RELATED CHANGES FOLLOWING PATIENTS' CANCER DIAGNOSIS.** Vlasta Aubrecht, RN, BSN, Rosanne Arlington, RN, MSN, CNS, ONC, OCN®, and Hyacinth Gordon, RN, MSN, ONC, CRRN, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Oncology patients' family caregivers are stressed and deal with a cadre of issues that can impact their wellbeing. To support the family caregiver and help them identify some of the issues and coping/health promoting strategies, a unit-based family caregiver support group convenes weekly on a surgical oncology urology and orthopaedic nursing unit. The facilitator identified a trend as she listened to the interactions during support group and began collection of information from 100 family caregivers to determine issues related to family caregiver health and wellbeing.

The purpose of this project was to identify changes in healthcare/coping strategies used by family caregivers of patients being treated for cancer.

The facilitator began collection of information from 100 family caregivers to determine issues related to family caregiver health and wellbeing. Information solicited included signs and symptoms and any changes they experienced following the patient's cancer diagnosis; whether there had been increased use of medication/herbs – both over-the-counter and prescribed; alcohol use; use of patients' medication; keeping own healthcare appointments; use of medication as prescribed; whether they used the medication in the dosage/frequency prescribed/recommended; and whether they potentially experienced side effects of medications/herbs that they consumed.

To date information has been obtained from 49 family caregivers. Nineteen family caregivers were taking prescribed medications. Of these, 13 were also taking over-the-counter medication and did not know whether their medications were compatible. Thirty-one caregivers took over-the-counter medications for symptoms they were experiencing. Thirty-two caregivers were experiencing side effects of medications they were taking. Three caregivers began using alcohol to help them relax and 3 other caregivers began using the patient's prescription medication to self-medicate for self-identified similar symptoms experienced. Caregivers reported nausea, vomiting, dizziness, diarrhea, and leg cramps that they had not previously experienced as well as flaring of Rheumatoid Arthritis.

Information from this project will provide added insight to the needs of the family caregiver for the oncology nurse. Through identification of coping/health issues of family caregivers, caregiver support groups and nurses working with oncology patients and their caregivers can address specific issues during their interactions.

## 84

**THE RELATIONSHIP OF FATIGUE AND MEANING IN LIFE IN PATIENTS WITH CANCER.** Paige Thompson, RN, DNSc(c), St. Luke's School of Nursing at Moravian College, Bethlehem, PA.

Fatigue has been reported as a frequent and significant side effect in cancer survivors. Patients who are confronted with a serious illness such as cancer tend to search for a meaning in that experience. A sense of meaning in life may be a psychological factor that influences the experience of fatigue. The results of this study suggest that a sense of meaning in life may be associated with decreased fatigue and overall symptoms in cancer survivors.

The purpose of this study was to determine the relationship between cancer-related fatigue and a sense of meaning in life. It was hypothesized that cancer survivors who report a greater sense of meaning in life would report less fatigue. This study contributes to the ONS research agenda in the area of cancer symptoms and psychosocial research in cancer survivors.

The middle range theory of unpleasant symptoms was used to guide this study. According to this theory, three categories of variables influence the various dimensions of unpleasant symptoms. These three variables are physiological factors, psychological factors, and situational factors.

This study used a cross-sectional, correlational design. Participants in this study were females 18 years of age and older who had completed their last treatment for primary breast cancer in the last 16 months. Instruments included the Piper Fatigue Scale (PFS), Life Attitude Profile (LAP), Memorial Symptom Assessment Scale (MSAS), and the Medical Outcomes Study SF-36. Data analysis included descriptive statistics, Cronbach's alpha, Pearson correlation coefficients, and analysis of variance.

Significant negative correlations ( $p < .05$ ) were found between the PFS total and two subscales and three of the LAP scales. Significant differences in mean scores on the PFS were found for stage of disease and use of anti-depressants. Significant differences in mean scores on the MSAS were found for stage of disease, religion, number of household members, and use of nutritional supplements. Findings suggest that meaning in life may contribute to cancer-related fatigue and overall symptoms and should be further studied and possibly be the focus of interventions for fatigue.

Funding Sources: Amgen

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**IMPROVING THE CARE OF LONG-TERM CANCER SURVIVORS: STATE OF THE SCIENCE AND RECOMMENDATIONS.** Margaret Barton-Burke, PhD, RN, University of Massachusetts-Amherst, Amherst, MA; Carol Curtiss, RN, MSN, self-employed, Greenfield, MA; PJ Haylock, RN, PhD(c), self-employed, Indian Creek, TX; Diana Mason, RN, PhD, *American Journal of Nursing*, New

York, NY; Mary McCabe, RN, MS, Memorial Sloan-Kettering Cancer Center, New York, NY; Dottie Gutaj, RN, BSN, Day Kimball Home Care, Putnam, CT; and Susan Leigh, RN, BSN, self-employed, Tucson, AZ.

In the United States, cancer survivors total over 10 million people (Edwards et al., 2005). This population comprises those survivors cured of their disease and no longer undergoing active treatment, as well as patients with recurrences or resistant disease requiring ongoing treatment.

With continued advances in strategies to detect cancer early and to treat it effectively, the number of people living years beyond a cancer diagnosis will continue to increase. Yet there is a lack of knowledge about long-term follow-up of cancer survivors and appropriate health care recommendations for this diverse population. Follow-up care is often provided by non-oncology health care providers who lack specialty expertise. Furthermore, there is a significant lack of data on the long-term experiences and follow up of cancer survivors. It is imperative that nurses and other health care providers understand the state of the science in this area and pursue strategies to improve survivors' care.

This presentation will discuss the outcomes from the "State of the Science Conference on Nursing Approaches for Managing Long-Term Sequelae of Cancer and Cancer Treatment" held July 2005. The goals of that symposium were to develop research priorities and recommendations for clinical care, education, and policy related to nursing care for survivors of cancer. Participants included leading nurse researchers; nurse experts in clinical practice, education, and administration; cancer survivors; representatives of consumer and national advocacy groups; as well as government and industry stakeholders.

The presentation will include the common problems faced by long term cancer survivors. Specific interventions related to family and psychosocial issues, neuropathic pain, sleep disturbances and fatigue, cognitive changes, osteoporosis, cardiovascular changes, male and female reproductive and hormonal changes.

The conference on long-term cancer survivors identified gaps in the science, recommended research priorities, identified barriers to improving the care of this population, and suggested strategies for overcoming or reducing these barriers across a variety of delivery systems.

Findings from this conference, including oncology nursing interventions, that specifically address the common clinical problems of long-term cancer survivors will be highlighted in this presentation.

## 86

**EMPOWERING ONCOLOGY NURSES TO USE SELF-CARE STRATEGIES.** Christina Kirk, RN, OCN®, Kate Kravits, RN, MA, and Randi McAllister-Black, PhD, City of Hope National Medical Center, Duarte, CA.

Recent research on stress management for nurses recommends creating tailored programs for nurses and highlights the importance of researching what type of intervention is most effective (Kash, et. al., 2000; Mimura and Griffiths, 2003). The Nursing Wellness Program is a new intervention designed to prevent burnout and increase self-care. Theoretically and methodologically sound stress management program for oncology nurses are needed.

Oncology nurses face unique stressors in their work environment such as working with critically ill and dying patients, meeting the needs of families and working with highly complex equipment. The consequence of failing to cope with the demands of a profession that actively interacts with life and death issues are profound. This syndrome is often referred to as burnout. The purpose of this project is to improve the coping of nurses in the face of chronic stressors. Empowering nursing staff by teaching wellness strategies will decrease their level of stress and burnout.

The program is an evidence-based collaborative project between psychology and nursing designed to create and test a specific nursing intervention. The course utilizes information from psychoneuroimmunology, cognitive-behavioral psychology and art therapy. It also includes material on the risks of chronic stress, behavioral practice of wellness strategies, self-monitoring, and creation of personalized wellness plans. This program is organized into six one-hour sessions and was initially integrated into the new graduate program. Twenty-seven new graduates completed the first course. The program will be available to 300 in-patient nurses at our institution in 2006.

Pre and post assessment includes the Maslach Burnout Inventory and Person in the Rain art technique, as well as course and faculty evaluations.

Nurses complete a wellness plan at the end of the course and then follow-up data is gathered at six and twelve months.

Pre-course data from the Nursing Wellness Program suggest that that our nurses are highly stressed and will benefit from wellness plans, and post-course data indicates that the course has been well received. The presenter will address specific long-term follow-up data for the first year.

## 87

**UNDERSTANDING PROSTATE NOMOGRAMS: A NEW PROGNOSTIC TOOL TO ASSIST PATIENTS IN MAKING TREATMENT DECISIONS.** Anthony DelaCruz, RN, OCN®, and Mary Schoen, RN, MSN, MPH, NP, Memorial Sloan-Kettering Cancer Center, New York, NY.

An important concern in the decision making process for prostate cancer patients is the predictability of outcomes based upon treatment choices. Prostate nomograms are instruments that use several clinical parameters to calculate the predicted probability that a patient will achieve a particular clinical endpoint. They are designed to help physicians and patients decide which treatment approaches will result in the greatest benefit. It is essential that nurses understand this technology so they may counsel patients and families and assist in the decision making process.

Sorting through the vast amount of information for prostate cancer patients can be overwhelming. Information concerning treatment selection, potential side effects, and long term prognostic factors are just some of factors involved in the decision making process.

A nomogram makes predictions based upon the characteristics of an individual patient. Researchers at Memorial Sloan-Kettering have pioneered the use of computerized tools called nomograms to help patients and their physicians decide among treatment choices. A combination of disease factors including stage of the cancer, prostate specific antigen (PSA), biopsy pathology, use of hormone therapy, and radiation dosage have been incorporated into the nomogram. The nurse along with the patient can use the nomogram to predict cancer control based upon a patient's unique clinical parameters and the treatment being considered.

Nomograms have proven to be clinically valuable tools for patient counseling. Many nomograms exist for prostate cancer. This discussion will focus on models developed at Memorial Sloan-Kettering Cancer Center, pertaining to pre-treatment and post-radical prostatectomy patients.

The principles and limitations of nomogram development will be discussed. At diagnosis, nomograms may assist in selecting a treatment that offers the most promising outcome. For post-prostatectomy patients, nomograms may predict the probability of remaining free from disease progression. Although clinically useful, nomograms are far from perfect and cannot be applied to all men. In general, they are constructed using patients treated at academic centers whose outcomes may vary when compared to the community setting. The oncology nurse can use nomograms predictions to serve as an initial basis upon which to further explore issues when making treatment decisions.

## 88

**ESTABLISHING ESSENTIAL NURSING COMPETENCIES AND CURRICULA GUIDELINES FOR GENETICS AND GENOMICS.** Kathleen Calzone, RN, MSN, APNG, National Cancer Institute, CCR-Genetics Branch, Bethesda, MD; Jean Jenkins, PhD, RN, FAAN, National Human Genome Research Institute, Bethesda, MD; Laurie Badzek, RN, MS, JD, LLM, American Nurses Association, Silver Spring, MD; Carolyn Constantin, RNC, PhD, Centers for Disease Control and Prevention, Atlanta, GA; Annette Debissette, DNSc, ANP, RN, Suzanne Feetham, PhD, RN, FAAN, and Denise Geolot, PhD, RN, FAAN, Health Resources and Services Administration, Rockville, MD; Pamela Hagan, MSN, RN, American Nurses Association, Silver Spring, MD; Madeleine Hess, PhD, RN, Health Resources and Services Administration, Rockville, MD; Dale Lea, MS, RN, MPH, CGC, APNG, FAAN, National Human Genome Research Institute, Bethesda, MD; Judith Lewis, PhD, RNC, FAAN, Virginia Commonwealth University, Richmond, VA; Kerry Nessler, RN, MS, Health Resources and Services Administration, Rockville, MD; Kathleen Potempa, DNSc, RN, FAAN, Oregon Health and Science University, Portland, OR; Cynthia Prows, MSN, RN, Cincinnati Childrens Hospital Medical Center, Cincinnati, OH; Elizabeth Thomson, DNSc, RN, CGC, FAAN, National Human Genome Research Institute, Bethesda, MD; Melinda Tinkle, PhD, RN, National

Institute of Nursing Research, Bethesda, MD; and Janet Williams, PhD, RN, FAAN, University of Iowa, Iowa City, IA.

The rapid translation of genetic and genomic science to clinical care has major implications for the nursing profession that has limited preparation in genetics. In response to this deficit, an initiative was launched to define the essential genetic and genomic competencies for all registered nurses regardless of academic preparation, role or clinical specialty.

The purpose of the competencies are to guide academic curriculum content/learning activities based on the current state of the evidence and guide the continuing education and specialty certification of practicing registered nurses. The ultimate goal is to prepare the entire nursing workforce to deliver genetically and genomically competent healthcare.

To establish the essential competencies, a Steering Committee (SC) of federal, academic and national leaders in nursing was established which identified, reviewed, analyzed, and compared competencies recommended in existing published and peer reviewed documents (including NCHPEG Competencies). A writing team from the SC was selected and the first draft of the competencies was completed and reviewed/approved by the SC. The proposed competencies were then presented for critique to nurse representatives to NCHPEG in January 2005 with revisions integrated. The revised essential competencies were then posted for public comment at <http://NursingWorld.org/practice> with announcements to the American Nurses Association (ANA), its constituent members and organizational affiliates, and other nursing organizations requesting their comments, then reviewed and incorporated. An invitational meeting was held September 21-22, 2005 of key stakeholders in collaboration with the ANA. Fifty participants reviewed, discussed, and modified the document with ultimate consensus on the competencies achieved.

An action plan is in progress for endorsement, integration of the competencies into curricula, the NCLEX examination, specialty certification processes, continuing education and accreditation.

We will report on the details of the competency development and consensus process, the status of the competencies, endorsement, and integration plans.

## 89

**UNCOVERING PRACTICE DIFFERENCES RELATED TO THE CARE OF IN-DWELLING AND EXTERNAL TUNNELED CATHETERS ACROSS PRACTICE SETTINGS IN A LARGE ACADEMIC MEDICAL CENTER.** Marian Bartholomay, RN, MSN, AOCN®, Susan Finn, RN, MSN, Alicia Rounds, RN, Robyn Bigelow, RN, BSN, Erika Barrett, RN, MSN, Amanda Coakley, RN, PhD, Rachel Bolton, RN, BSN, and Barbara Cashavelly, RN, MSN, AOCN®, Massachusetts General Hospital, Boston, MA.

Tunneled catheters place the client at risk for complications such as infection, occlusion and extravasations. Inappropriate care of these devices can result in persistent disability or even early death. The overall complication rate involving tunneled catheters is reported between 1.4% and 14.4 % (Dicarlo, et al. 2001). Evidenced-based guidelines identified that education and training of health care providers who insert and maintain these catheters is one of the most important strategies for the prevention of catheter-related infections (Ogrady, et al. 2002).

The MGH nursing policy and procedure manual clearly delineates the care for these catheters. Despite this, members of the Cancer Nursing Practice Committee (CNPC) at the Massachusetts General Hospital (MGH), representing oncology nurses in both adult and pediatric ambulatory and inpatient areas, identified that there is variation in the nursing care of these catheters across care units.

In an effort to identify care actually being delivered to this population, members of the CNPC have developed an electronic survey to be administered across the oncology nursing clinical areas. The goals are to identify current practice, and develop an educational program that will promote consistency of care across practice settings. The objective of the Survey is to describe actual nursing management of Port-a-Caths and Hickman/Broviac catheters in the different inpatient units and outpatient treatment areas.

An ongoing review of the literature will be conducted to evaluate practice at MGH, as compared to evidence-based best practices.

The survey data will be used to inform the CNPC current nursing practice and serve as a guide for an education curriculum to assure consistency with evidence-based practice

Analysis of the survey as well as example of the education plan will be presented. Engaging the staff nurses in this process and providing the time



and leadership support required has proven to be an effective means of engaging the staff nurse in the process of shaping evidence based practice and critical peer review of oncology nursing care.

## 90

**SEQUENTIAL INTERVENTION STRATEGY DIRECTED AT REDUCING BSI IN THE HOSPITALIZED ONCOLOGY POPULATION IMPROVES NURSING KNOWLEDGE AND PRACTICE.** Suzanne McGettigan, MSN, CRNP, AOCN®, Deana Potts, MSN, CRNP, AOCN®, Mika Epps, MSN, RN, and Mauri Sullivan, MSN, RN, Hospital of the University of Pennsylvania, Philadelphia, PA.

Catheter-Related Blood Stream Infections (CR-BSI) increase patient morbidity, mortality, length of hospitalization (LOS), and costs. Ninety percent of CR-BSI are associated with central venous catheters (CVCs). A hospital wide initiative was instituted at this academic medical center to reduce the incidence of CR-BSI; however, that program did not specifically address the unique needs of oncology patients. Hospitalized oncology patients are a high risk/ high volume population due to receipt of immunosuppressive therapies, prolonged neutropenia, multi-lumen catheters, and disruption of skin integrity by high dose chemotherapy regimens. CR-BSI rates have been reported as high as 13.62 per 1000 catheter days in stem cell transplant recipients. Educational programs have proved successful in decreasing the CR-BSI incidence.

The purpose of this intervention was to increase nursing knowledge and improve nursing practice thereby improving the nursing-sensitive patient outcome of CR-BSI.

Unit-based CNSs from two oncology units convened a multidisciplinary Oncology BSI Team. CNS observed clinical practice of staff nurses and convened focus groups to identify "problem areas." CNSs developed a sequential intervention consisting of educational and environmental components. The educational program focused on oncology-specific risk factors, identified "problem areas," and hands on practicum. The environmental modification brought supplies to the point of care. Staff nurses anonymously completed written tests evaluating knowledge and practice before and after the intervention.

Nursing Knowledge and Practice were evaluated using a pre-test/post-test format with multiple-choice questions assessing knowledge and a Likert Scale assessing practice compliance. Observation of clinical practice and associated documentation was performed prior to and following the intervention. Self-reported nursing knowledge improved from 73% to 88%; practice improved from 86% to 93%.

CVCs are essential for the comprehensive care of hospitalized oncology patients for the administration of IV fluids, medications, chemotherapy, and blood products. Oncology patients have many risk factors for the development of CR-BSI and require meticulous care of their CVCs. CR-BSI are known to increase treatment-related mortality; transplant recipients with infections have higher mortality rates and LOS. Oncology nurses are the caretakers of patients' CVCs. They must be knowledgeable and effective at maintaining CVCs and preventing CR-BSI.

## 91

**IMPLEMENTING NEW MEDICARE DOCUMENTATION/BILLING REQUIREMENTS AND CHEMOTHERAPY DEMONSTRATION PROJECT INTO PRACTICE.** Sherry M. Wiedow, RN, OCN®, and Darlene M. Pawlik Plank, RN, MSN, AOCN®, Marshfield Clinic, Marshfield, WI.

The challenge for Oncology practices is how to provide accessible, high quality health care to patients in a cost-effective and efficient manner. 2005 changes in billing rules for medications and infusions created an opportunity to change practice support.

Practice support changes were needed to support clinically relevant documentation and to accurately capture charges for services provided.

A committee was charged with the task of incorporating & implementing these changes by 1/1/2005. We recognized the following issues: increased nursing time to incorporate all changes in documentation, decreased patient contact, and increased risk of non-compliance. These issues prompted the creation of automated cues in the documentation process to meet the requirements & incorporate the demonstration project into practice.

Our documentation system includes the use of electronic templates. The template format is based upon the ONS Chemotherapy & Biotherapy Guidelines and recommendations for chemotherapy documentation. The

templates can be customized by the nurse to document additional care, assessments or interventions.

Templates were created and/or revised to add the Centers for Medicaid and Medicare Services Demonstration Project (CMSDP) information and infusion start/stop times. The templates were made available to all Oncology nurses at 7 locations. Nurses were provided training on the function and use of the templates to support the new billing guidelines and the CMSDP.

Successful implementation of standardized templates for documentation increased documentation and charge accuracy without compromising the ability to easily adjust documentation to reflect deviations in clinical care.

Electronic templates enhanced accurate and meaningful documentation that supported hiring of positions to create accurate charges from nurse documentation and Pharmacy admixing records. Audits of the billing show high degree of accuracy. The templates are widely accepted and support the need for standardization of clinical practice when medical outcomes are not compromised. A standardized process for creating and revising documentation templates has been implemented.

The changes in billing for services and the CMSDP have required a review of how care is delivered, documented and billed. One can view this as a barrier to care or as an opportunity for systems improvement.

## 92

**DEVELOPMENT AND IMPLEMENTATION OF A RECOGNITION DEVELOPMENT MODEL FOR ADVANCED PRACTICE NURSES: AN OPPORTUNITY FOR PROFESSIONAL GROWTH.** Theresa Sullivan, RN, MSN, Rosanne Arlington, RN, MSN, CNS, ONC, OCN®, Venita Madsen, RN, MSN, CNS, and Veronica Guidry, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Advance Practice Nurses work in a variety of roles and settings within our institution and had varied levels of recognition. Advance Practice Nurses (APN) sought an opportunity to offer a program that recognized their many professional contributions to patients, staff, the institution and community. Development of the Advanced Practice Nurses Recognition Development Model (APN RDM) provided that opportunity.

A two-level APN RDM was developed to recognize individual APN competency in their role, recognize achievement of approved goals above and beyond normal job expectations, and ultimately to promote nursing practice in the advanced practice role.

A system-wide task force of interested APNs worked to develop a voluntary recognition model for APNs that could be used by APNs in their varied roles throughout the institution. A document, based on the Scope and standards of Oncology Nursing Practice, was developed, accepted by the APN group, and served as the foundation of the program. Two levels were recognized – Commendable (demonstrating full competence in the role equivalent to a highly skilled and fully seasoned performer) and Exemplary (demonstrating completion of approved goals above and beyond normal job functions). Following development of concept, tools, and procedure, Nursing Administration and Human Resources provided their approval and support to bring the project to fruition. Review and approval of the APN's RDM document submission is completed by the APN RDM Committee (APN peers). Education about the process was accomplished through multiple "town hall" meetings, email, and posting on the APN web page.

Since its inception in March 2004, 145 submissions have been received. This has enabled us as a group to realize our individual contributions as well as group contributions to the institution in promoting patient care and professional development. It has given us a stronger voice within the institution.

The APN RDM is positive tool that can be used to identify, support, and promote competency and professional growth – individually and as a whole. This tool and process may be helpful to other oncology APNs.

## 93

**CLINICAL NURSE RESOURCE: A NEW ROLE DESIGNED TO SUPPLEMENT VACANT CLINICAL NURSE SPECIALIST POSITIONS.** Patricia Johnston, RN, MHA, OCN®, Amy Meyers, RN, BSN, OCN®, Zandra Rivera, RN, MSN, OCN®, Carol Causton, RN, OCN®, and Lourine Davis, RN, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Clinical Nurse Specialists (CNS) perform a critical role in leading efforts to improve outcomes affecting the oncology patient. Through direct

intervention, promotion of clinical assessment skills, critical thinking, advanced clinical skills and knowledge, and interactions with the interdisciplinary team, the CNS works to advance oncology nursing practice as direct care providers, consultants, educators, patient and system advocates, team coordinators, program designers, administrators and/or researchers. With the downsizing of the CNS role in hospital and institutional settings, this has led to a steady decline in the number of applicants entering CNS academic programs. As a result, institutions that value the CNS role, and the expertise they provide in highly complex patient care environments, have experienced long-standing vacancies.

Due to the inability to fill two vacant CNS positions on the Blood & Marrow Transplant Unit (BMT), a method was undertaken to identify and recognize experienced clinical nurses who could practice as unit resources and contribute to the mentoring, support, and development of patient care providers and evidence-based indicators on the inpatient unit. The Clinical Nurse Resource (CNR) position was developed to address this need.

A position description including essential functions in clinical practice, education, collaboration/consultation, research, quality improvement, and leadership was formulated. Performance criteria in clinical practice included serving as a clinical expert in BMT and promoting excellence in clinical nursing practice through assessment, interaction with staff, the interdisciplinary team and evaluation of patient care. The CNR was required to demonstrate defined leadership skills in the profession of nursing. Outcomes of the CNR positions were documented on a developed evaluation tool.

Value of the CNR position was immediately achieved with positive outcomes. Some of these included mentorship/coaching of new BMT clinical staff, development of new standard operating procedures and an evidence-based research project to reduce the incidence of falls on the unit.

The CNR position on the inpatient BMT unit has proven beneficial as an alternative to fulfill the desired role of the CNS.

## 94

**FOLLOW UP CARE OF LYMPHOMA SURVIVORS IN A NURSE PRACTITIONER JOINT PRACTICE MODEL.** Christine Liebertz, RN, CS, MSN, AOCN®, Memorial Sloan-Kettering Cancer Center, New York, NY.

As treatment options for lymphoma improve and more patients are living longer, a coordinated approach to follow-up care is essential for addressing the overall health needs and quality of life of survivors. Survivors of Hodgkin's disease (HD) and Non-Hodgkin's lymphoma (NHL), particularly the young adult, face the long-term physical and psychosocial effects of illness and treatment.

Depending on the treatment they receive, lymphoma survivors face not only the risk of recurrence, but also the risk for secondary cancers such as leukemia, breast, skin, and thyroid. Late treatment effects include cardiovascular, endocrine, and fertility abnormalities along with a variety of psychosocial issues including financial, marital and work related. The complexities of these patients are difficult to address during a routine followup clinic visit. As part of an overall Survivorship Program at this NCI designated cancer center, a Survivorship Nurse Practitioner (NP) was added to the lymphoma visit to better address the needs of these patients, to develop a long term care plan, and to educate survivors about appropriate intervention, followup, referrals and services that will optimize their quality of life.

HD and NHL patients two years post treatment will be part of the pilot program. The NP in this clinic performs a complete patient assessment and, as recommended by the 2005 Institute of Medicine report on Survivorship, develops a "survivorship care plan" based on national guidelines. This care plan includes recommendations for screening for recurrent disease and other cancers, information about early detection and management of treatment sequelae, and implementing positive health behaviors. Referrals are made for additional psychological, social and financial concerns.

Close monitoring and patient followup will evaluate patient's adherence to care plan recommendations along with potential barriers that may include psychosocial, financial and supportive issues. After the pilot phase, metric analysis will evaluate overall program feasibility, along with patient, NP and physician satisfaction.

As the number of survivors of lymphoma increase, it is imperative that oncology nurses and NP's have an understanding of the complexity

of care needed, and the services that are available. This presentation will review our survivorship program and the medical sequelae of lymphoma therapies.

## 95

**LUNG CANCER SURVIVORSHIP: A NURSE PRACTITIONER MODEL FOR FOLLOW-UP CARE.** Amy Logue, MS, APRN, BC, NP-C, Memorial Sloan-Kettering Cancer Center, New York, NY.

In the US, there are 10 million cancer survivors; 64% will be alive 5 years from diagnosis. Lung cancer (LC), the second most common cancer in both sexes, is the leading cause of cancer-related deaths. While the overall 5 year survival rate for those diagnosed with LC is 15% and the risk of disease recurrence is high, approximately 62% of patients (pts) diagnosed with Stage I non-small cell lung cancer (NSCLC) can expect to survive 5 years after treatment. Recent evidence demonstrates that targeted therapies and platinum-based adjuvant chemotherapy in early stage NSCLC improve survival.

Follow-up after lung cancer treatment is an important phase of the cancer continuum. Lung cancer patients are often older with significant comorbid conditions. Late treatment effects of lung cancer therapy include fatigue, pain, decreased pulmonary function, depression, anxiety and diminished QOL. At our institution, a LC survivorship pilot program utilizing a nurse practitioner (NP) care model was developed to meet these specific patient needs as well as serve as a paradigm for other survivorship programs.

Eligible pts are those with history of stages I/II NSCLC, 1 year post surgical resection without evidence of disease. Institutional standards require pts be seen by the NP every 6 months for the second post-operative year and annually thereafter. Our program, implementing cancer survivorship recommendations published in a recent Institute of Medicine report, provides a broad set of services emphasizing health promotion and cancer prevention. Follow-up care includes radiographic and close clinical surveillance for disease recurrence or new primary lung cancers; recommendations for routine cancer screening per national guidelines; assessment and management of treatment-related sequelae; identification and referral for chronic comorbid medical and psychosocial conditions; and smoking cessation.

Evaluation of the LC survivorship pilot program will include pt and provider satisfaction, adherence to follow-up recommendations, percentage of referrals for cancer screening, psychosocial and sub-specialty evaluation and assessment of feasibility.

Oncology advanced practice nurses can effectively provide comprehensive follow-up care for LC survivors. Our program hopes to define the medical and psychosocial needs of LC survivors so that oncology nurses can incorporate this knowledge into daily practice and patient care.

## 96

**AMBULATORY ONCOLOGY CHART AUDITS—PERFORMANCE IMPROVEMENT.** Wendy Miano, MSN, ND, RN, AOCN®, and Kathleen Chiarucci, RN, MSN, MBA, CPHQ, University Hospitals of Cleveland, Cleveland, OH.

JCAHO (Joint Commission Accreditation of Healthcare Organizations) requires periodic medical record review. In the Ambulatory Oncology setting, medical record documentation serves as the patient's primary record of chemotherapy and oncology care. In a large tertiary oncology ambulatory unit, Performance Improvement Initiatives have been drawn from a monthly chart audit.

Specific indicators are measured with each medical record audit (For example: Verbal Order authentication, Medication summary/Allergies; Pain Assessment and interventions/evaluation of effectiveness). In 2005, Performance Improvement Initiatives specific to monthly chart audits were identified. Two PI initiatives include: 1) Authentication of MD Verbal Orders; and 2) Pain Assessment and Management/Documentation Standard.

Described are the PI components specific to Verbal Order Authentication and Pain Management. Verbal Order Authentication required assessment of operational issues: Location of chart ('flagging chart for signature' versus faxing verbal order for signature (in satellite setting)). Pain Assessment and Nursing Management required a formal Standard of Care authored by an Advanced Practice Nurse whose expertise is pain management. Monthly Pain Case Study In-services reinforced elements of pain assessment and management in very tangible, 'real life' case studies.

A standardized Pain Flow Sheet (keyed with expected elements of pain assessment and management) was revised for ease of documentation, tracking interventions over time.

Evaluation of these PI initiatives has been streamlined through monthly audit reports. Positive and negative trends have provided timely feedback to PI components. For example, pain assessment documentation, with initial nursing education, improved dramatically. However, documentation of the pain interventions and tracking management over time was incomplete.

Ambulatory Oncology Chart Audits provide Performance Improvement Initiatives, which are based in nursing practice and documentation standards. A future development will be incorporating peer review given Chart Audit findings - raising the bar of Oncology Nursing Practice and Documentation.

## 97

**IMPLEMENTING TRIAGE AND RESOURCE NURSING ROLES IN AN AMBULATORY INFUSION UNIT.** Stefanie Walsh, RN, BSN, OCN®, Ieva Broks, BSN, RN, OCN®, and Nicola Gribbin, BSN, RN, Massachusetts General Hospital, Boston, MA.

Nurses at Massachusetts General Hospital practice a Collaborative Governance Model. In January 2005 two Oncology Ambulatory Infusion Units combined into one. The implications of this move included changes such as, staffing levels and differing experience levels, nursing resources, patient volume/acuity, medical equipment, and electronic information systems.

To undergo a smooth integration, a Transition Team was formed nine months prior to the scheduled move, consisting of clinical, pharmacy, and support staff from each unit. A subgroup of unit nurses then formed to further define and formalize potential needs.

This subgroup was responsible for identifying barriers to the transition and strategizing ways to manage these barriers. After several meetings it became evident that the roles of Triage nurse and Resource nurse would need to be clearly defined.

Nurses from both units met regularly to identify the clinical skills, character traits, and experience required of the triage and resource nurses. The staff nurses were queried through writing, staff meetings, and individual conversations with members of the subgroup for their thoughts about each of the roles. This feedback was incorporated into a role description that was distributed to and agreed upon by all staff.

It was decided that the new unit would require two triage nurses and two resource nurses daily. The Triage nurse would manage patient volume, nursing assignments, coordinate admissions to the hospital, triage MD practice calls, and assess patients requiring urgent care. The Resource nurse would manage clinical issues, assist staff in the care of acutely ill and/or complicated patients, and have an overview of the unit acuity. Nurses in these roles would become the "point persons" in the unit to coordinate the smooth running of daily activity.

Four months after implementation, a questionnaire was distributed to staff exploring their understanding and the effectiveness of the roles to their daily practice. It was found that these roles needed further clarification, but were necessary for smooth unit operation.

The triage and resource nurses meet bimonthly with unit management for the ongoing evaluation of the roles and unit operations. This model appears to be successful in the new Infusion Unit.

## 98

**"CELEBRATE LIFE" A STEM CELL TRANSPLANT TRIBUTE.** Katherine Lindemann, RN, OCN®, Sara Flickner, RN, BSN, OCN®, Beth Kubow, RN, Melissa Leaverton, RN, BSN, Jillian Miller, CTRS, Nancy Nainis, ATR, LCPC, and Barb Rice, RN, OCN®, Northwestern Memorial Hospital, Chicago, IL.

Patients about to receive a stem cell transplant for treatment of life-threatening illnesses such as lymphoma, leukemia, and multiple myeloma receive aggressive therapies requiring lengthy hospital stays. This often presents challenges to address psychosocial concerns that rise to the forefront. The goal is to instill hope in an environment of care that meets the physical, emotional, and spiritual needs of patients and their families. To that end, an interdisciplinary team of nurses, physicians, social workers, chaplains, art therapists, recreation therapists, and patients collaborated to design a plan to recognize this special moment as a "celebration of life"

The purpose of "Celebrate Life" A Stem Cell Transplant Tribute is two part. The first is to acknowledge the importance of the stem cell transplant process on the day of transplant, and the second is to celebrate "survivorship" at an annual event that is sponsored by our institution

A "Celebrate Life" package will be presented to transplant recipients on the day of their reinfusion. The package includes a journal, a humor-infused kit designed to bring smiles and lift spirits, mints, a personal handwritten note from the attending physician as well as a commemorative poster signed by the transplant team. Transplant patients may also choose to invite the services of pastoral care to participate in this celebratory event. All team members are encouraged to visit patients before or after the reinfusion to offer hope and encouragement. The celebration doesn't stop here. At an annual survivor celebration walk, stem cell transplant patients are invited to meet and walk together to share a special morning of celebrating survivorship.

An initial plan is to interview each patient within two weeks of his or her transplant day and document his or her anecdotal responses to this project. These will be reviewed by the interdisciplinary team every three months with new ideas incorporated into the celebration.

This "celebrate life" project is a result of feedback from patients, families, and staff who requested that reinfusion day be acknowledged as a special event. To honor this special population of patients, this project was developed to "Celebrate Life".

Discussion: Most medication errors are products of multiple system failures and a complex work environment. Providing a safeguard against errors is a function of all disciplines involved. In the case of preventing intrathecal administration of vincristine, a preventable error with a fatal consequence, collaboration between Pharmacy, Nursing, and the Medical staff is vital.

## 99

**COMPARISON OF THE AMOUNT OF RENAL INSUFFICIENCY AND MUCOSITIS BETWEEN A NEW IMMUNE SUPPRESSION REGIMEN TO PREVENT GRAFT VERSUS HOST DISEASE AND PROMOTE ENGRAFTMENT DURING ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION AS COMPARED TO THE STANDARD OF CARE.** Sallie Brovitz-Palmer, RN, BSN, OCN®, and Tracy Douglas, RN, MSN, OCN®, Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, Baltimore, MD; and Michele Phelps, RN, BSN, and Leo Luznik, MD, Johns Hopkins University, Baltimore, MD.

Allogeneic bone marrow transplantation is a curative therapeutic option for many patients with severe hematologic malignancies. However, it is associated with many side effects that require expert nursing management. Using the standard approach of cyclosporine and low dose methotrexate to prevent graft-versus-host disease (GVHD), grade four hemorrhagic mucositis and renal insufficiency is common. Cyclosporine is nephrotoxic and is associated with renal tubular acidosis leading to renal insufficiency. It has been shown that up to 75% of allogeneic transplants develop a doubling of their creatinine. A new regimen to prevent GVHD and promote engraftment uses high dose cyclophosphamide on day three and four post stem cell infusion to provide immune suppression and kill activated donor lymphocyte cells which are associated with GVHD.

It is proposed that high dose cyclophosphamide given after an allogeneic stem cell transplant will cause less renal insufficiency and less mucositis than the standard approach to GVHD prophylaxis.

During the last two years, 18 related allogeneic patients and 9 matched unrelated donor patients were transplanted using the post transplant high dose cyclophosphamide regimen. Patients had their mucositis graded by the nursing staff. The maximum creatinine was recorded for all twenty-seven patients. The percent that doubled their initial creatinine and the percent that had grade three and four mucositis were compared to published measures of patients on cyclosporine and methotrexate.

22% of patients had grade three and no patient had grade four mucositis. 26% of patients had renal insufficiency using the post transplant cyclophosphamide regimen, which is much less than the standard allogeneic regimens using cyclosporine and low dose methotrexate.

Even a subtle decrease in renal function can herald a more complicated clinical course involving renal failure, fluid and electrolyte balance, and multi-organ failure. Renal insufficiency makes it difficult to dose immune suppression, antibiotics and other medications. Mucositis is related to infection, longer length of stays, pain, and decreased nutrition. Using an allogeneic regimen that reduces these two common morbidities will



improve the overall mortality of allogenic bone marrow transplantation. Nurses managing allogenic patients need to understand how different regimens can affect common morbidities related to transplant.

## 100

**STOP FOR SAFETY: A BMT FALL ASSESSMENT TOOL.** Agnes Kulma, RN, MSN, ANP-C, Amy Meyers, RN, and Patty Johnston, RN, MHA, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Within M.D. Anderson Cancer Center, the Blood and Marrow Transplant (BMT) center is the largest transplant center in the world, performing an estimated 600 transplants per year. Between September of 2003 and July of 2004, M.D. Anderson's inpatient center experienced 335 patient falls. Sixty-four of these falls occurred on the BMT floor.

The first purpose of the project was the creation of a new fall risk tool. This tool was created to correctly identify and classify the risk factors specific to the BMT patient. Based on the calculated score from the BMT tool, the patient was placed into one of three risk categories that encompassed level-specific interventions. This included low (green), medium (yellow), and high (red) risk categories.

The second purpose of this project was to increase the nursing staff's knowledge and awareness of the identified risk factors and to educate them on the use of the newly created fall assessment tool. This purpose aided in the correct assessment of the high-risk patient. A pre-test and a post-test were given to evaluate the success of the 30-minute in-service. The clinical application of the risk assessment tool was evaluated through the utilization of an audit tool checklist. Weekly chart audits were performed in order to determine proper implementation and staff compliance of the new fall prevention program.

With the increasing trend of the fall incidence rate on the BMT unit, a multi-disciplinary Falls Taskforce Committee was created to address this pertinent issue. Based on research performed by the committee, it was determined that a tool would be created utilizing variance report data, research found in the literature review, and tools present in the literature.

Using a repeated measures t test, there was a substantial increase in percentage of questions answered correctly between the pre-test and the post-test. Overall compliance rate for the project implementation was 75.3%.

A successful fall prevention program aids in the responsibility of keeping patients safe and attempts to eradicate unnecessary complications, while promoting health restoration after the bone marrow transplant process. In doing so, it aids the patient and the health care team in reaching the ultimate goal of making cancer history.

## 101

**THE DEVELOPMENT OF A PATIENT CLASSIFICATION TOOL ON AN INPATIENT BLOOD AND MARROW TRANSPLANT UNIT.** Marcia Brandert, RN, BSN, OCN®, Debbie Cline, RN, BSN, Patty Johnston, RN, MHA, OCN®, Carol Causton, RN, OCN®, and Amy Meyers, RN, BSN, OCN®, University of Texas M.D. Anderson Cancer Center, Houston, TX.

In the current health care arena, an increasing focus on rising health care costs, the shortage of nurses, and proposals for safer, mandatory staffing levels have led many hospital administrators to re-evaluate the standards and systems used to classify patients. The use of a Patient Dependency System (PDS) has presented an alternative to the traditional Patient Classification System tool.

The purpose of the PDS is adequate staffing of patient care units without compromising patient care. Rather than focusing solely on the acuity of the patient, this system places a greater emphasis on the patient's dependency on staff to have their needs met and the hours of care required by each patient.

A patient classification tool utilizing the PDS model is currently being developed at our comprehensive cancer center. Each inpatient unit is actively involved in the process of creating a tool specific to their patient population. On the inpatient blood and marrow transplant unit, a committee comprised of nurse management and staff nurses was formed to evaluate our unit's needs. From this committee, nine classification categories have been developed with defined criteria for each. A point system allocates a set number of points for each criteria in a particular category. Patients are then placed in a class level (1-5) based on their total number of points and reevaluated each shift. The second part of this model encompasses workload measurement. This process will assist in determining

the hours of care required by each patient and quantifying the work done by the nurse during a particular shift. It will focus on both direct and indirect care activities, as well as routine activities on the unit.

The goals of this project are:

- \* Optimal staffing levels for all inpatient units
- \* Appropriate use and allocation of resources
- \* Maintaining budget compliance
- \* Greater ease in assigning patients on individual units

As the unit continues with the development of the tool, the importance of objectivity, statistical validity, documentation, and the ability to discriminate between patients is emphasized.

## 102

**BONE MARROW TRANSPLANT—WHAT HAPPENS NEXT: A TEACHING GUIDE FOR THE COMMUNITY BASED ONCOLOGY NURSE.** Margaret Bellerjeau, RN, BSN, OCN®, Temple University Bone Marrow Transplant Program, Philadelphia, PA.

Patients treated in the community setting are often sent to a large university or comprehensive cancer care center for a bone marrow or hematopoietic stem cell transplant. Compounded by the impact of being referred to another facility, patients experience multiple stressors that may delay the process. The oncology nurse is in a position to help bridge this changeover by educating the patient about what to expect during the transition period, facilitate the transplant process with an understanding of the timing of referrals and expedite the delivery of required information.

Too often there is a delay in referring a patient to a transplant center due to lack of knowledge or misinformation about the process. This can result in unnecessary stress and unrealistic expectations endured by the patient and/or a delay in treatment. The purpose of this presentation is to make oncology nurses aware of what is involved in bringing a patient to a bone marrow or hematopoietic stem cell transplant and the need for early referrals.

Develop a referral guideline, outlining the general steps involved once a patient is referred to a transplant center. Patient handouts on what to expect as the patient transitions to the transplant program will also be included. In addition emphasis on the need for a timely referral within the treatment course and specific criteria that the community nurse can assemble to facilitate the process will be included.

Data will be collected via questionnaires to evaluate the effectiveness of the guidelines by assessing the length of referral times before and after the development of this program. In addition, the transplant program representative, will conduct a brief survey at the end of the new patient visit, to assess the ease from the patient's perspective, with which the transition took place.

Oncology nurses, as well as physicians, though familiar with bone marrow or stem cell transplants, are often unaware of the amount of time, and testing needed for successfully bringing a patient to transplant. By improving awareness and promoting early referrals we enhance the transplant experience, increase quality of care and improve transplant outcome.

## 103

**EDUCATING PATIENTS FOLLOWING BREAST SURGERY: A MULTIDISCIPLINARY NURSE DIRECTED BREAST SURGERY REHABILITATION GROUP.** Elisheva Hertz, RN, Latasha Anderson, RN, OCN®, Blanca Vasquez-Clarfield, RN, MA, and Dorothy Dulko, MS, PhD(c), RN, NP, AOCN®, Memorial Sloan-Kettering Cancer Center, New York, NY.

Surgery for breast cancer often involves mastectomy or lumpectomy with axillary node dissection. These interventions require insertion of drains to prevent fluid accumulation in the wound post operatively. Although the physical recovery from breast cancer surgery is rapid, these drains may remain in place for 7-10 days. This results in most patients being discharged with their drains.

The objective of this pilot project is to determine patient perception of a nurse facilitated breast surgery group at this NCI-designated cancer center. The Breast Surgery Rehabilitation Group (BSRG) provides concrete information regarding self-care and a forum to discuss issues that accompany breast surgery. The class is offered in collaboration with physical therapy and social work. Understanding the patient's view of a tailored teaching methodology allows oncology nurses to customize educational interventions and to foster effective patient-provider partnerships.

Patients admitted for breast surgery are informed of the BSRG on postoperative day one. Classes are held five days per week. One-hour sessions include the topics of: (1) incision care and wound healing; (2) purpose of drains and drain care; (3) hand and arm care post axillary node dissection and; (4) breast prosthesis. Exercises for the postoperative period are presented. Time is allotted for patient prompted discussion of issues such as sexuality and body image. 100 patients attending the class will be surveyed to determine perceptions of the BSRG based on Bloom's Learning Domains.

Preliminary results for 45 patients revealed that 78% of patients felt prepared to empty their drains and 90% understood how to record drain output following the class. 76% of women stated decreased anxiety regarding care of drains at the end of the BSRG with 100% able to verbalize long-term safety measures to reduce lymphedema.

Oncology nurses are in a pivotal position to empower patients by instituting a multidisciplinary unit-based breast surgery rehabilitation group. Preliminary data indicates patients experience less anxiety and increased ability to perform self-care following group attendance. We plan to pursue controlled research with a tailored patient discharge education program to evaluate impact on perception of care and incidence of readmission.

## 104

**IMPROVING CARE OF THE HEAD AND NECK CANCER PATIENT RECEIVING COMBINATION CHEMOTHERAPY AND RADIATION THERAPY.** Gail Funk, RN, OCN®, and Tracy Gosselin-Acomb, RN, MSN, AOCN®, Duke University Hospital System, Durham, NC.

Patients undergoing combination therapy for head and neck cancer face a variety of side effects that cause significant morbidity and affect treatment outcome. Many of these side effects are also the initial presenting symptoms of the disease including odynophagia, pain and weight loss. Effective assessment, education and symptom management are critical components of the nursing role in radiation oncology.

Patients undergoing combination treatment for head and neck cancer often experience candida, mucositis, nausea, odynophagia, pain, skin reaction, trismus, and xerostomia. These side effects impact the patient's nutritional status and early intervention is critical. The development of a comprehensive program to meet patient care needs by the primary nurse is essential to patient compliance during treatment and in the early follow-up phase.

The primary nurse in radiation oncology works collaboratively with the physician, physician assistant, dietitian and other support staff. The nurse provides continuity of care and serves as the patient advocate throughout treatment. The nurse completes daily assessments and uses a variety of educational tools to support the patient. The development of a daily calendar that includes information on prescriptive medications, nutrition needs, and oral care has also assisted patients in performing self-care. Patients may also receive supportive care medications and intravenous fluids as needed in the clinic. Patients who are on a clinical trial also benefit from this care.

Patients who receive timely assessment, intervention, and education are more compliant with treatment recommendations and typically do not require admission into the hospital. By having a primary nurse as part of the treatment team who understands the physiologic and psychosocial impact of treatment the quality of care and the desired outcomes can be achieved.

The model of primary nursing although not new is a viable way to provide patient care in an ambulatory setting. This model allows the nurse to work collaboratively with other healthcare providers and to develop appropriate resources to support care. Ultimately, it provides the patient with a consistent point of contact.

## 105

**RAISING AWARENESS OF THE NON HODGKIN'S LYMPHOMA FOR ONCOLOGY NURSES: A LYMPHOMA IS NOT A LYMPHOMA. HAVE WE MADE ANY PROGRESS IN 30 YEARS?** Deborah Rust, RN, MSN, CRNP, AOCN®, Genentech, South San Francisco, CA; and Beth Warnick, RN, MSN, CRNP, University of Pittsburgh, Pittsburgh, PA.

The rationale for raising awareness of the number one hematological malignancy, Non Hodgkin Lymphomas (NHL) for oncology nurse is critical. The natural history of the two major types of NHL: Indolent and Aggressive are diversely different. Oncology nurse are at the forefront in

providing detailed disease education to their patients. Without specific knowledge of the disease course, one over 35 lymphomas is placed in a generic category. Educational opportunities to increase knowledge of this disease state, resources and educational information are needed to expand knowledge to maintain competency. They also have to share their knowledge in order to promote quality healthcare and improve clinical outcomes.

This abstract was designed to serve as a mechanism to increase knowledge of the classification system, diagnostic evaluation and new prognostic indices of most common and complex hematologic malignancy.

Classification, staging, prognostic factors, and natural history of NHL must be appreciated by the nursing staff to build a solid foundation for patient education that ultimately impacts quality of life of a chronic disease versus and potentially curable one.

The benefits of heighten awareness of classification and prognostic factors have a crucial impact upon outcomes by more fully understanding the importance of response to treatment. This translates into factors to consider when assessing patients tolerance to treatment and the importance of on time treatment schedules.

This complex information is well documented in the literature and we believe that oncology nurses play crucial role in disease management. As oncology nurse are challenged to keep up with the explosion of information through practice, education and understanding the research, nurses can help to bring the disease state information and evidence to their practice and patients.

## 106

**EPENDYMOMA: YOU ARE ALWAYS ON MY MIND.** Suzanne Carroll, RN, MS, AOCN®, Wake Forest University Baptist Medical Center Comprehensive Cancer Center, Winston-Salem, NC.

Brain tumors account for 1.4% of all cancers and 2.3% of all cancer related deaths. Ependymoma is a rare brain tumor that typically occurs in children and accounts for only 5% of all brain tumors. Early clinical features of brain tumors are related to increased intracranial pressure and are manifested by headaches, seizures and nausea and vomiting. In January 2005 after 2 months of relentless symptoms I was diagnosed with this rare brain tumor.

The purpose of this poster presentation is to describe the clinical manifestations and treatment course for newly diagnosed ependymoma. Patients with brain tumors may experience an array of symptoms depending on the site, size and nature of the brain tumor. Surgical resection and radiation can produce unique neurological symptoms that may or may not resolve with time. Oncology nurses need to be familiar with the unique manifestations of brain tumors so they can best support their patients throughout the disease continuum.

An MRI of the head is the most common diagnostic tool used to identify brain neoplasms. Surgical excision is often employed as the initial treatment for brain tumors. Improvements in surgical techniques and management of postoperative cerebral edema have improved surgical intervention outcomes immensely. Postoperative MRI imaging and CSF analysis are performed to identify any leptomeningeal spread. My tumor was classified as a WHO Grade II Ependymoma and radiation therapy was indicated.

A thermal mask fused to my MRI results was used to immobilize by head to direct treatment to the fourth ventricular region of my brain. I then received a radiation boost directed to the tumor bed using a new device for immobilization called a Radio Cam.

As an oncology nurse I was suddenly thrust into a world of oblivion as a new cancer patient. I experienced many neurological deficits related to surgery, side effects from radiation, and tremendous anxiety over the uncertainty of my future. I learned first hand what our patients go through and how important it is to recognize and legitimize all of their concerns. It is my intent to share what I learned through this poster presentation.

## 107

**IMPROVING CARE ACROSS THE CONTINUUM FOR THE NEURO-ONCOLOGY PATIENT.** Nancy Eisenson, RN, MSN, and Cindy Bohlin, RN, MSN, Duke University Medical Center, Durham, NC.

In 2003 there were approximately 18,000 new cases of primary brain and nervous system tumors in the United States (Jemal et al, 2003) Over 13,000 people will die from these tumors. Deficits related to brain tumor

location, size, and pathology can impair cognition, motor/sensory abilities, and induce seizure activity. The Brain Tumor Center at Duke evolved to meet the complex needs of these patients.

To discuss how an advanced practice nurse improves care across the continuum for the Neuro-Oncology patient and their caregivers.

A screening assessment plan was developed by the inpatient neuro-oncology clinical nurse specialist. This involved daily screening of neurosurgical patients for potential craniotomies. A rounding book was developed and used to track information regarding each potential brain tumor patient. Surgery dates, and pending pathology sections were made to serve as daily followup reminders for discharged patients. Once a patient's pathology is received it would be discussed with the neuro-oncology team during multidisciplinary brain tumor center rounds. Possible treatment options would be discussed and the APN would call the patient with the pathology and possible treatment options formulated by the team. Then a new outpatient consult appointment would be made to finalize the plan.

Neuro-Oncology patients seen for followup in the outpatient clinic who are diagnosed with non-complicated DVT's who were previously admitted for anticoagulation are now seen by the APN who facilitates subcutaneous teaching and the administration of the first Lovenox® dose. The APN also confirms that insurance will approve the Lovenox® prior to releasing them from the outpatient facility.

The Neuro-Oncology APN facilitates improved care for the neuro-oncology patient from pre-admission to post discharge. Patients report improved satisfaction with timely access to pathology and possible treatment options prior to their first outpatient visit. In the last six months two patients have avoided hospital admission from non-complicated DVT's as a result of the APN driven screening/education plan.

APN tools/methods such as this could be used in any oncology setting.

## 108

**A CLINICAL MODEL FOR FOLLOW-UP CARE OF PROSTATE CANCER SURVIVORS.** Mary Schoen, RN, MSN, MPH, OCN®, CRNP, Memorial Sloan-Kettering Cancer Center, New York, NY.

Men with a history of prostate cancer make up the second largest group of cancer survivors, almost 1.7 million persons. Approximately 98 percent of prostate cancer patients are alive five years after diagnosis. As more men are diagnosed with early stage prostate cancer, the consequences of treatment have a significant impact on the long term quality of life of survivors. Sequelae of surgery profoundly affects patients' sexual and urinary functioning and in turn, quality of life. Psychosocial effects after prostate cancer treatment include concerns about having cancer, fears of recurrence, and the effects of post-treatment symptoms.

In response to the growing number of survivors, our institution implemented a pilot program for patients with early stage prostate cancer. In addition to the routine surveillance for men who have undergone a prostatectomy, the survivorship program offers expanded services with an emphasis on wellness and cancer prevention. A nurse practitioner with training in survivorship is the independent care provider.

Patients are referred to the survivorship program at 6 to 12 months post surgery for ongoing surveillance that includes an annual digital rectal examination and monitoring of prostate-specific antigen (PSA) levels every six months for five years then annually. At each visit the nurse practitioner performs a comprehensive history and physical exam; the patient also completes a questionnaire measuring anxiety/distress and a six-item questionnaire evaluating urinary and sexual functioning. The survivorship program also has a wellness component utilizing national screening recommendations, such as those for colonoscopy and skin cancer. Preventive health practices including weight loss and exercise are encouraged. After each visit, a follow-up letter is sent to the local physician with a copy of the physical examination, plus any recommendations.

Evaluation of the pilot includes patient and clinician satisfaction, feasibility of the program and monitoring referrals for specialty care and patient compliance with the referral.

Advanced practice oncology nursing care is critical to quality care in prostate cancer survivors. The nurse practitioner-directed prostate cancer survivorship clinic addresses quality of life issues such as erectile dysfunction and urinary incontinence and evaluates for cancer recurrence, development of a second primary cancer and psychosocial distress.

## 109

**CELEBRATING 10 YEARS AS AN ONS CHAPTER.** Tracy Skripac, RN, MSN, AOCN®, CHPN, self-employed, Canfield, OH; Patricia McAbier, RN, MPH, Amgen, Inc., Thousand Oaks, CA; Amy Davidson, RN, OCN®, Forum Health, Youngstown, OH; and Guistina Brechbill, RN, MSN, AOCN®, Morningstar Hematology-Oncology, Canton, OH.

The local chapters of the Oncology Nursing Society have celebrated milestones and achievements in various ways. Planning and providing meaningful chapter anniversary events involves the need for leadership, collaboration, networking, creativity, and dealing with budgetary issues. This poster will describe how one local chapter dealt with these issues and obstacles to commemorate its 10-year anniversary.

The purpose of this poster is to describe one local ONS chapter's research of the anniversary commemoration efforts of other chapters within the state along with its own endeavors to plan and provide a memorable celebratory experience for its chapter leaders and members.

A chapter board meeting to focus on the chapter's anniversary was held to determine initial planning efforts. All previous chapter presidents were invited to attend the meeting for input and feedback about celebratory events. Prior to starting any event planning, other chapters within the state were contacted to determine the ways in which they have commemorated anniversary milestones. An anniversary committee was formed that included representatives from the present and past board as well as from the general membership. Feedback from other chapters was discussed, proposals were initiated, and decisions were finalized that included offering special annual member gifts and raffle items at each general meeting. A climactic semi-formal dinner event was planned that included the ONS President as a keynote speaker, the recognition of charter members and past presidents, along with a PowerPoint presentation of chapter memories.

The anniversary events were evaluated based on member surveys and an evaluation form at the final dinner event. Feedback from the evaluations and surveys will be utilized to plan future anniversary events.

The information from this chapter's experience and poster can assist other chapters to develop an effective and successful proposal for anniversary celebration event planning.

## 110

**UPDATE ON NURSING MANAGEMENT OF PATIENTS WITH ACUTE PORPHYRIAS.** Joyce Loyal, RN, BSN, OCN®, Wishard Health Services, Indianapolis, IN.

The porphyrias are genetic disorders of heme biosynthesis, which clinically manifest themselves in a variety of ways, all yielding unique challenges to nurses in diagnosis, treatment and patient education. Porphyrin is not a single disease, but a group of at least eight disorders all due to deficiencies in the same metabolic pathway, having the common feature of accumulation in the body of porphyrins or porphyrin precursors. Porphyrins combine with iron to create heme, which attaches to protein to form hemoglobin.

Though the acute porphyrias are relatively rare disorders, occurring in approximately 1 per 100,000 persons, oncology nurses are often involved in the management, treatment and education of these patients. Therefore it is crucial that oncology nurses have an understanding of this disease and the implications for nursing care. The purpose of this poster is to present the pathophysiology, common clinical features, exacerbating factors and the nurse's role in the management of porphyrias. After viewing this poster, the nurse will be able to:

1. Describe basic pathophysiology of porphyria.
2. Describe common clinical presentation of patients experiencing acute exacerbations.
3. Discuss treatment of porphyria attacks.
4. Discuss critical patient education components.
5. Identify patient risk factors for the development of hepatocellular carcinoma.

In our center, nursing care for patients with acute porphyrias, includes the administration of glucose containing IV solution for mild attacks, the administration of analgesics for the management of pain, and the administration of hemin(Panhematin) to replenish cellular heme pools. Patient education is a necessary component of nursing care and should include signs and symptoms of exacerbation, information regarding precipitating factors, analgesic and treatment regimens, and also possible long term effects.



Prevention of future attacks or decrease in frequency can be significantly impacted by the patient's ability to recognize early signs and symptoms of an impending attack, and education in the avoidance of precipitating factors.

Oncology Nurses have a critical role in the management of symptoms associated with acute porphyria, and providing support and education to assist patients in coping with the long-term effects of these disorders.

## 111

**MAINTAINING TIGHT GLUCOSE CONTROL OF THE HEMATOLOGIC ONCOLOGY PATIENT.** Lisa Privitere, RN, OCN®, Roswell Park Cancer Institute, Buffalo, NY.

Current research has demonstrated that tight glucose control has positive outcomes in surgical patients. The evidence demonstrates that a blood glucose level maintained between 80 and 150mg/dc, showed a decrease in the mortality rate.

Literature does not specifically address the needs of hematology oncology patients. Maintaining tighter control of blood glucose levels in this specific population may be of great significance due to their disease state and treatments. Steroids are frequently prescribed, thus potentially causing hyperglycemia. An insulin protocol was developed and initiated when a medical oncology patient, had three consecutive blood glucose levels of 150mg/dc or greater.

The purpose of maintaining tight blood glucose levels is directly related to the significant reduction in hospital mortality, acute renal failure, bacteremia, red cell transfusions and critical care management, thus improving outcomes while reducing cost.

The treatment plan for the hematologic oncology patient may require the nurse to administer steroids and dextrose containing intravenous fluids. These treatments routinely cause an increase in the blood glucose levels to above normal, creating risk.

A six month evaluation of the hematology oncology patients prior to and past the initiation of the protocol, was completed and clinical outcomes measured

Maintaining tight glucose control in hematology oncology patients proves to be beneficial. The insulin protocol is a nurse-directed protocol that is a proactive means of therapy. Treatment and duration of such medications that induce high glucose levels is a practice to be evaluated for broad application to this high-risk oncology patient population.

## 112

**IMPLEMENTING A MULTI-SYMPTOM RISK ASSESSMENT TOOL IN THE SARCOMA POPULATION.** Nancy Leahy, RN, MSN, CRNP, AOCN®, and Cathy Fortenbaugh, RN, MSN, AOCN®, Pennsylvania Oncology Hematology Associates, Philadelphia, PA.

Pre-chemotherapy risk assessment is essential to proactive patient education and symptom management. When risks are assessed pre-chemotherapy and again before each subsequent treatment, side effects can be reduced or eliminated. A multi-symptom risk assessment tool allows clinicians to assess risks in one place and initiate supportive care guidelines that stem directly from the risk assessment. The adult Sarcoma patient population generally receives high doses of chemotherapy for extended periods of time. Implementing risk assessment leads to improved patient outcomes in this population.

To describe the effects of the implementation of a multi-symptom chemotherapy risk assessment tool on patient outcomes in the adult Sarcoma patient population.

The AIM Higher multi-symptom risk assessment tool was implemented by the Nurse Practitioner during the pre-chemotherapy visit for all new Sarcoma patients beginning in March 2005. AIM Higher is a national quality improvement program. An AIM Higher Risk Assessment task force created the tool based on best available evidence to date for each symptom. The symptoms include; neutropenia, anemia, nausea and vomiting, diarrhea, constipation, anxiety, depression, mucositis, peripheral neuropathy, cardiac toxicity and hand/foot syndrome.

Patient education was initiated and proactive interventions such as growth factors and antiemetics were ordered based on the risk assessment. Supportive care guidelines were initiated based on the patient's risk for developing the symptom. Preliminary chart review suggests that the impact of many of the chemotherapy-related symptoms has been reduced or eliminated.

Oncology nurses can use a multi-symptom chemotherapy risk assessment tool in a variety of settings before chemotherapy is initiated. The adult Sarcoma patient population is particularly vulnerable to treatment side effects due to the high doses of chemotherapy that are given. This group can receive great benefits from risk assessment. Identification of risks initiates proactive patient teaching and guidelines for the prevention and management of the symptom that the patient is at risk for developing. Proactive management of chemotherapy-related symptoms leads to improved quality of life and improved quality of care for the patient.

## 113

**IMPLEMENTATION OF VENOUS THROMBOEMBOLISM PROPHYLAXIS GUIDELINES ON A GYN ONCOLOGY IN-PATIENT NURSING UNIT.** Jerelyn Osoria, RN, OCN®, Dorothy Dulko, PhD(c), MS, NP, AOCN®, and Blanca Vasquez-Clarfield, MA, Memorial Sloan-Kettering Cancer Center, New York, NY.

Acute venous thromboembolism (VTE) is a common complication in hospitalized patients, with oncology patients being at particularly high risk. National expenditures associated with VTE represent a health care burden of approximately 1.5 billion dollars annually. Although research supports the clinical benefit of preventing VTE in acutely ill, hospitalized patients, it is suspected that prophylaxis is underutilized. Ongoing review of practice patterns, with feedback of data to clinical staff, may increase compliance with established guidelines for VTE prevention.

The standard regimen for VTE prevention in hospitalized patients is the usage of sequential compression devices (SCD) with or without low molecular weight heparin (LMWH). The purpose of this project was to evaluate and improve compliance with recommended VTE prophylaxis guidelines within this NCI-designated cancer center in-patient Women's Oncology Unit.

An interdisciplinary VTE prophylaxis committee was developed and in turn initiated a computerized order entry set containing standard guidelines for VTE prevention. This order entry set provides recommendations tailored to the admitting service and patient's profile. GYN surgery and medicine providers were educated as to the importance of VTE prevention and were given feedback on service-wide compliance with ordering of prophylaxis. Daily floor rounds were performed to assure the placement of SCD's at the bedside; with flow sheet documentation of implementation. Monthly educational sessions were held for all of the nursing staff; including feedback of compliance data.

Preliminary data revealed that there was discordant compliance with provider initiated VTE prophylaxis between GYN Medical Oncology (overall 38% without admission VTE prophylaxis order) and GYN Surgical Oncology (overall 8% without admission VTE prophylaxis order) for the period of May-November 2005. Following education and compliance feedback preliminary data for December 2005 suggests improved compliance. Nursing documentation and chart audit is ongoing to determine trend and compliance in nursing staff patterns.

Greater awareness of VTE prophylaxis is a priority for all patients at risk, especially for hospitalized cancer patients who often do not receive appropriate antithrombotic therapy. Oncology nurses have the opportunity to streamline the approach to prevent VTE by ensuring effective prophylaxis administration according to easily implemented guidelines.

## 114

**IS THERE A DIFFERENCE IN PATIENT REPORTED SYMPTOM SEVERITY BETWEEN MEDICAL ONCOLOGY PATIENTS OVER THE AGE OF 65 AND UNDER THE AGE OF 65?** Cathy Fortenbaugh, RN, MSN, AOCN®, Pennsylvania Oncology Hematology Associates, Philadelphia, PA; Mary Pat Lynch, RN, CRNP, AOCN®, and Clara Cameron, RN, CRNP, AOCN®, Joan Karnell Cancer Center at Pennsylvania Hospital, Philadelphia, PA; David Mintzer, MD, Pennsylvania Oncology Hematology Associates, Philadelphia, PA; and Ann Vale and Benjamin Easter, Princeton University, Princeton, NJ.

The Joan Karnell Cancer Center at Pennsylvania Hospital is participating in a quality improvement initiative called AIM Higher, designed to improve assessment, information provision and management of cancer related symptoms. It uses a computerized assessment tool called the Patient Care Monitor administered on a portable computer called the e/tablet. Patients rate the severity of their cancer related physical and psychological symptoms on a 0-10 scale. It appears that younger patients experience a greater degree of symptom distress than their older counterparts.

To determine if there is a difference in patient reported symptom severity between medical oncology patients over the age of 65 and under the age of 65 and develop age specific interventions to address these symptoms.

Symptom scores from approximately 1650 patients, divided into five age categories were evaluated. 2-sample t-tests were utilized to determine if severity differences in the above and below 65 age groups were significant. 24 of the 36 physical symptoms and 10 of the 11 psychological ones were significant at the .05 level. However, it is possible that younger and older patients experience the same severity of symptoms, but that for whatever reason, younger patients perceive this severity more strongly and/or report it at a higher level. If this is the case, an older patient reporting a severity level of 4 may be experiencing a higher level of distress than a younger patient reporting a 5. Another series of t-tests, designed to account for these idiosyncrasies, was run and significant differences found in 15 physical and 4 psychological symptoms, including trouble sleeping, trouble concentrating, and being worried.

A review of the literature on this topic also confirms numerous other studies in which younger cancer patients reported more difficulty with physical and psychological problems than older patients

Reasons for these differences may include developmental stage of life and experience in coping with previous symptoms.

Older patients may experience less distress (not severity) from common chemotherapy related symptoms.

## 115

**HYPERSENSITIVITY/ANAPHYLAXIS/ALLERGIC REACTION PROTOCOL.** Donna Cirigliano, RN, OCN®, Donna Delicio, RN, MSN, and Elizabeth Troxler, RN, BSN, OCN®, Overlook Hospital, Summit, NJ.

In the outpatient chemotherapy setting we administer many medications and transfusions that have a high incidence of hypersensitivity/anaphylactic reactions. We provide these services for many physicians including Hematology/Oncology, Gastroenterology, Infectious Disease, and Rheumatology to name a few. None of which are located on site.

The purpose of our project was to develop and implement a standard protocol for the management of hypersensitivity/anaphylactic reactions to IV infused agents.

An ADE multidisciplinary task force consisting of Nurses, Pharmacists and Physicians was formed. A hypersensitivity/anaphylactic reaction protocol and a corresponding "Flowgorithm" was developed based on ONS Standards of Care. This "Flowgorithm" allows RNs to treat patients who experience hypersensitivity/anaphylactic reactions immediately while attempts are made to contact the physician. "In the event of a Hypersensitivity/Anaphylaxis/Allergic Reaction institute the Outpatient Infusion and Chemotherapy Day Room Hypersensitivity/Anaphylaxis/Allergic Reaction Protocol" is printed on pre-printed Doctor Order forms. Once the "Flowgorithm" is implemented it then acts as documentation of the reaction and the nursing actions. The protocol then becomes part of the patient's permanent record.

(The "flowgorithm" and pre-printed Doctor Order forms are easily available for review upon request).

The multidisciplinary task force reviewed several cases in which the protocol was instituted and found it to be effective in rapid response to hypersensitivity/anaphylactic reactions. Our physicians have been very satisfied with the process and the outcomes.

This clinical practice is applicable to all oncology administration centers that administer high risk medications with the potential for hypersensitivity/anaphylactic reactions.

This tool can be easily utilized or transformed to meet the needs of other outpatient infusion areas. It is a key element of oncology nursing practice in the management of hypersensitivity/anaphylactic reactions.

## 116

**RESPIRATORY CARE FOR ONCOLOGY NURSES: AN ILLUSTRATED EDUCATION MODEL.** Heather Sellers, RN, BSN, Kerry Harwood, RN, MSN, Sherry Whitfield, RRT, RCP, and Joey Misuraca, RN, Duke Hospital, Durham, NC.

Oncology nursing care often involves equipment and supplies that may be unfamiliar to novice nurses or those new to the unit. The Institute for Health Policy has identified the use of equipment and supplies as an important domain to evaluate from a patient safety perspective. Standard-

ized practices can prevent errors that compromise patient safety. Easily accessible, illustrated instructions for utilization of equipment can effectively standardize nursing practice. The presentation will demonstrate this nursing education model via a respiratory care equipment exemplar.

On a medical oncology unit at this NCI-designated comprehensive cancer center, 35% of nursing staff have been on the unit for less than 2 years and 20% for less than one year. Excluding nebulized and inhalation therapies that are solely administered by respiratory therapists, a total of ten respiratory set-ups are currently in use. Approximately 978 patients required oxygen or humidified air therapy during inpatient admissions to these units in 2005. While respiratory therapy is often administered by respiratory therapists, the RN is responsible for initiating such therapy in response to new physician orders and respiratory emergencies. Unit staff have perceived respiratory care set-up as time-consuming, with less experienced staff verbalizing concerns related to the potential for improper set-up and administration.

Pictorial instructions for various respiratory care set-ups were created, beginning with images of required equipment and supplies and ending with a photographic record of the completed set-up. These instructions were made available in both print and online manuals.

Outcomes are being evaluated using a nursing survey. The survey includes questions concerning resource utilization, satisfaction with educational content, approval of format(s), perceived self-efficacy in respiratory care set-up utilization, and demographics.

Oncology nursing increasingly relies upon a variety of equipment and supplies to meet complex patient needs. Novice and experienced nurses require continuing educational resources to develop and maintain competency with equipment and supplies. Pictorial education can be an efficient resource for such skills training. Evaluation of this teaching method will determine how effectively this strategy can be applied to other equipment and supply educational needs within oncology nursing.

## 117

**WALDENSTROM'S MACROGLOBULINEMIA: WHAT IT IS, HOW TO TREAT IT, AND THE NURSE'S ROLE.** Tiffany Richards, MS, ANP, AOCNP, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Waldenstrom's macroglobulinemia (WM) is a low grade lymphoplasmacytic malignancy characterized by bone marrow infiltration of lymphoplasmacytic cells that produce a monoclonal immunoglobulin M (IgM). Approximately 1,500 patients in the United States are diagnosed annually with WM. While approximately 25% of patients present with asymptomatic disease, the majority requires treatment for signs or symptoms (anemia, bulky adenopathy, splenomegaly, high monoclonal protein >5g/dL, or hyperviscosity). It is imperative that nurses are knowledgeable about Waldenstrom's in order to educate patients/families about the disease, identify potential complications, and provide symptom management.

Clinical manifestations may result from increased cell growth or overproduction of the monoclonal IgM. Symptoms indicative of treatment include, anemia, the presence of B-symptoms, hyperviscosity, organomegaly, bulky lymphadenopathy, neuropathy, or the development of associated complications, such as cryoglobulinemia, amyloidosis, or hemolysis. The development of hyperviscosity may require plasmapheresis prior to initiating systemic therapy if visual disturbances such as retinal hemorrhages and/or neurological impairment are present.

Systemic treatment involves combinations of alkylating agents, nucleoside analogs, and monoclonal antibodies, which will be discussed. While plasmapheresis does not reduce tumor burden, it reduces the serum IgM level by 35% and provides temporary symptom management until systemic chemotherapy is initiated.

Nearly 100 previously untreated patients at our center received cladribine alone or in combination with other agents, (cyclophosphamide and/or rituximab). Over 90% of patients achieved partial response after only 2 courses given six weeks apart followed without further therapy until time of relapse.

Nursing has the opportunity to impact outcomes for individuals with WM. Patient/family education regarding the disease and clinical manifestations to report is essential so that patients can seek medical attention promptly when symptoms arise. Since treatment for macroglobulinemia is usually outpatient, education about symptom management can improve the patients overall wellbeing.

This presentation will (1) discuss a brief overview of the pathogenesis, clinical features, and treatment of Waldenström's (2) complications associated with macroglobulinemia such as hyperviscosity, cold agglutinin anemia, amyloidosis, and cryoglobulinemia, and (3) define nursing's role in assessment and treatment.

## 118

**RISK ASSESSMENT TOOLS REDUCE HOSPITALIZATION AND IMPROVE OTHER PATIENT OUTCOMES RELATED TO FEBRILE NEUTROPENIA.** Paula Sturiale, RN, OCN®, Texas Oncology, PA, Fort Worth, TX; Scott Orjada, RN, BSN, El Paso Cancer Treatment Centers/Texas Oncology, PA, El Paso, TX; Bridget Babu, RN, BSN, OCN®, Texas Oncology, PA HEB, Bedford, TX; Molly Mullins, RN, OCN®, Texas Cancer Center Arlington/Texas Oncology, PA, Arlington, TX; Marsha Raley, RN, BSN, Texas Oncology, PA Arlington, TX; Mari Robertson, RN, BSN, OCN®, Texas Oncology, PA Irving, TX; Beverly Holstein, RN, Allison Cancer Center/Texas Oncology, PA, Midland, TX; Vickie Simpson, RN, BSN, OCN®, Texas Oncology, PA Fort Worth, Fort Worth, TX; Kathy Dodson, RN, Texas Cancer Center Denton/Texas Oncology, PA, Denton, TX; and Alycia Morrison, RN, Lake Vista Cancer Center/Texas Oncology, PA, Lewisville, TX.

Patients given myelosuppressive chemotherapy are at greater risk for febrile neutropenia (FN), which can lead to hospitalization. A survey of Texas Oncology P. A. (TOPA) sites revealed that FN-related hospitalizations occurred at a rate of approximately 10%. Although this rate is consistent with other national benchmarks, reducing it could benefit patients. In fact, other published reports have indicated that the implementation of risk assessment tools can improve patient outcomes, including FN-related hospitalizations.

To determine if the use of a risk assessment tool can decrease the rates of FN and FN-related hospitalization, the use of IV antibiotics, and the frequency of chemotherapy dose reductions and delays in patients receiving chemotherapy.

A nurse-initiated prospective risk assessment study is being conducted at 10 TOPA sites where the nursing staff has been trained to use the risk assessment tool. Patients with non-Hodgkin's lymphoma or cancer of the breast, lung, or ovaries are being evaluated for their risk of neutropenia before the initiation of chemotherapy and at the initiation of subsequent cycles. The results of these risk assessments will be shared with the treating physician, and the decision on whether to use growth factors will be documented. Each patient will be followed for up to 6 cycles of chemotherapy.

The effect of using the risk assessment tool will be evaluated by comparing the outcomes of patients treated after the implementation of the tool with those from a retrospective review of patients treated before the implementation of the tool. Two hundred and fifty patients (25 at each site) will be analyzed prospectively and the chart records of another 250 patients (25 at each site) will be analyzed retrospectively. Changes in the following outcomes will be recorded: chemotherapy dose reductions and delays, antibiotic use, FN, and hospitalization.

We believe that oncology nurses, through the use of the neutropenia risk assessment tool, at initiation and during chemotherapy will improve patient outcomes. The interim results of the prospective study and the final results of the retrospective analysis will also be presented.

## 119

**THE ROLE OF THE ONCOLOGY NURSE IN PRECHEMOTHERAPY NEUTROPENIC RISK ASSESSMENT AND PATIENT OUTCOMES.** Anne Doyle, RN, MSN, Kathryn Keegan, ARNP, Kristin Mullen, ARNP, Gabrielle Zecha, PA, C, Charles Boyd, PA, C, and Janice Hutson, RN, BSN, Puget Sound VA Medical Center, Seattle, WA.

Myelosuppressive chemotherapy regimens often result in neutropenia, which can lead to febrile episodes requiring hospitalization. Identifying patients at high risk for neutropenia before the initiation of treatment enables providers to make decisions about the need for proactive growth factor support.

To assess the effect of pretreatment neutropenic risk assessment on patient outcomes.

A neutropenic risk assessment, which was consistent with the recently published evidence-based guidelines of the National Comprehensive Cancer Network, was completed by the clinic nursing staff for all new patients beginning chemotherapy in the Cancer Care Clinic. Based on the results of this assessment, appropriate patients received growth

factor support starting in the first cycle of chemotherapy. The effect of the implementation of a risk assessment tool was evaluated in a review of chart records; patient outcomes in 2004, before the tool had been implemented, were compared to outcomes in 2005, after the tool had been routinely used on every patient initiating a new chemotherapy regimen.

The implementation of the risk assessment tool significantly reduced the number of hospitalizations for febrile neutropenia (FN) by 78%, from 9.7% in 2004 to 2.1% in 2005 ( $P = .003$  [Fisher Exact Test]). The total number of hospital days also decreased from 117 days to 24 days. In 2005, the proactive use of growth factor support increased from 26% in the first 6 months to 51% in the last 6 months. Reactive growth factor use also decreased from 10% to 6%. The number of patients given growth factor support proactively (51%) corresponded to the proportion of patients treated with myelosuppressive chemotherapy regimens associated with >20% incidence of FN (49%). These data support the appropriate use of colony-stimulating factors based on chemotherapy risk.

The completion of a neutropenic risk assessment before the initiation of chemotherapy has a positive effect on patient outcomes, with fewer incidences of FN and hospitalization, as well as fewer total inpatient days. This study demonstrates the feasibility of implementing risk assessment tools; oncology nurses can routinely evaluate patient risk for chemotherapy-induced neutropenia, which can result in a substantial improvement in patient outcomes.

## 120

**IMPLEMENTATION OF PRACTICE GUIDELINES FOR CHEMOTHERAPY-INDUCED NEUTROPENIA: FROM PAPER TO PRACTICE.** Cathy Maxwell, RN, OCN®, CCRC, Advanced Medical Specialties, LLC, Miami, FL; and Alisha Stein, RN, BSN, OCN®, South Florida Comprehensive Cancer Centers, Plantation, FL.

It is well accepted that identifying patients at high risk for neutropenia using a risk assessment tool can improve patient outcomes by allowing the use of growth factors to those most likely to benefit. Oncology nurses are usually charged with implementing guidelines for the management of neutropenia in their practice; however, the practical aspects of integrating guidelines should be discussed.

To provide oncology nurses with the tools that they need to implement guidelines for the management of chemotherapy-induced neutropenia in their practice

Practice guidelines for the management of neutropenia should be developed by the oncology team based on systematic literature searches and published guidelines. These guidelines should be tailored to the needs of each practice and conform to local and state laws. The priorities of the reviewing body should also be considered to ensure approval. Once approved, the staff should be trained to use the guidelines, which can then be implemented in the practice. The barriers to implementation of the guidelines are typically lack of buy-in from other staff and lack of time or resources. A pilot project showing an improvement in patient outcomes and practice efficiency may help overcome these challenges. Finally, practice guidelines should be continually updated as new information becomes available.

In order to assess the effect of implementing practice guidelines for chemotherapy-induced neutropenia, baseline measures should be collected. A retrospective review of chart records can provide the necessary information. After the implementation of the practice guidelines, relevant outcomes, e.g., incidence of febrile neutropenia, hospitalizations for febrile neutropenia, chemotherapy dose reductions or delays should be measured and compared to the baseline measures.

The use of practice guidelines can improve the efficiency of the practice, as well as the quality of care provided to the patient. Because of their role in patient risk assessment, administration of medication, documentation, and patient education, oncology nurses play a crucial role in both the development and implementation of practice guidelines. By becoming familiar with the practical aspects of guideline development, any oncology nurse can implement the guidelines in his or her practice.

## 121

**UNDERSTANDING THE TREATMENT OF NEUTROPENIC FEVERS IN PATIENTS WITH HEMATOLOGIC MALIGNANCIES.** Laura Adams, MSN,



RN-C, ANP, WHNP, Ohio State University Arthur G. James Cancer Hospital, Columbus, OH.

Neutropenia is a common toxicity of therapy for hematologic malignancies. It is defined as  $<500$  neutrophils/mm<sup>3</sup> or  $<1,000$  neutrophils/mm<sup>3</sup> with a predicted decrease to  $<500$  neutrophils/mm<sup>3</sup>. Infections occurring during neutropenia are a leading cause of morbidity and mortality. The National Comprehensive Cancer Network (NCCN) and Infectious Disease Society of America (IDSA) have established guidelines for treatment and evaluation of patients with neutropenia who develop fever defined as a single oral temperature  $\geq 38.3^{\circ}\text{C}$  or a temperature  $\geq 38.0^{\circ}\text{C}$  persistent over one hour.

Research over the last 20 years has demonstrated that infections with gram-positive organisms have become more commonly implicated than those with gram-negative organisms. Recent treatment recommendations reflect this data and include coverage for gram-positive organisms to prevent sepsis.

A side-by-side comparison was made between the NCCN and IDSA guidelines for neutropenic fever therapy in high-risk patients. High risk is defined as  $<500$  neutrophils/mm<sup>3</sup> or an anticipated fall to this level. Both guidelines recommend intravenous antibiotics. Both recommend mono- or dual therapy with or without vancomycin, depending on specific situations. Acceptable monotherapies are extended spectrum antipseudomonal cephalosporins or broad-spectrum carbapenems. NCCN differs in which piperacillin/tazobactam is recommended for monotherapy. Recommended dual therapies include an aminoglycoside with a carbapenem, an extended-spectrum cephalosporins, or an antipseudomonal-penicillin with or without vancomycin. Because vancomycin resistant enterococcus (VRE) has become more common, both agencies include criteria for the inclusion of vancomycin. Anti-fungal coverage is recommended for persistent fever over 3-5 days without yield of specific organisms. Therapy is recommended until Absolute Neutrophil Count (ANC) is  $> 500$  or as recommended for isolated organisms.

The NCCN and IDSA neutropenic fever therapy guidelines were established by extensive research and clinical analysis. Understanding these recommendations allows for continuity of care among high-risk patients.

When fever arises during neutropenia, it is important to begin appropriate antibiotics, selected on a case-by-case basis within established guidelines. The NCCN and IDSA guidelines should be utilized with consideration of institutional guidelines, patient history and presentation, and anti-microbial susceptibility patterns within an individual institution.

## 122

**DEVELOPMENT OF A FEBRILE NEUTROPENIC PATHWAY.** Lynne Brophy, RN, MSN, OCN®, AOCN®, Bethesda North Hospital-TriHealth, Cincinnati, OH; Sharon Hafertepe, RN, MSN, Good Samaritan Hospital-TriHealth, Cincinnati, OH; Teresa Lippert, RN, Bethesda North Hospital-TriHealth, Cincinnati, OH; and Sara Godfrey, RN, BSN, OCN®, and Pat Berning, RN, OCN®, Good Samaritan Hospital-TriHealth, Cincinnati, OH.

Neutropenic sepsis is a major cause of death in patients receiving cancer therapy. Through assessment and education, nurses can decrease the risk of death from sepsis. Delays were noted in quick identification and treatment of patients with of febrile neutropenia.

Our goals related to this project were to:

- 1) Increase and facilitate identification and treatment of neutropenia related sepsis.
- 2) Initiate antibiotic treatment within two hours of admission to the Emergency Department
- 3) Reduce the number of ICU admissions for neutropenic patients admitted through the Emergency Department.
- 4) Improve communication between the Emergency Department, inpatient medical units and medical staff.
- 5) Standardize care delivery by developing admission orders and a clinical pathway.

The multidisciplinary team working on the pathway

- 1) Examined the current evidence regarding care of neutropenic patients and then weighed findings against patient values and the clinical population in our area.
- 2) Developed an outcome based multidisciplinary clinical pathway and admission orders incorporating established Tri-Health fever and Neutropenic precautions that have reduced infection rates and costs of care in our leukemic population.

- 3) Aligned Emergency Department's triage orders for neutropenic patients.
- 4) Educated Emergency Department, inpatient nursing and medical staff about identification of neutropenic sepsis and use of the pathway.
- 5) Developed a wallet identification card for patients who are at risk for neutropenia. Patients are given this card in physician's offices and oncology clinics and asked to present it to the triage nurse in the emergency department upon arrival.
- 6) Developed Patient education tools, including discharge instructions, mouth care, and identification of signs and symptoms of infection. Measurements included:
  - 1) Length of time between presentation to the Emergency department and initiation of antibiotics.
  - 2) Number of patients who presented their wallet identification cards.
  - 3) Number of patients who were admitted to ICU with neutropenic sepsis.
  - 4) Length of stay of the patients who entered the hospital through the emergency department that were placed on the pathway with the order set compared to those who were not.

The impact of pathway use on nursing practice and LOS will be discussed.

## 123

**A DECISION TREE FOR ANEMIA INTERVENTION: NURSES ARE KEY TO IMPROVING CLINICAL PRACTICE.** Maureen Buckner, RN, MSN, CNP, AOCN®, and Melissa Nelson, RNC, Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH.

Anemia is a common complication for patients undergoing chemotherapy. Anemia-directed interventions are useful if routinely implemented; however, new and emerging data on erythropoietic therapies represent challenges for oncology clinics and drive the need to update their evidence-based anemia-treatment guidelines. As primary supportive care providers, nurses are ideally situated to evaluate new guidelines and associated patient outcomes. Here we describe one center's pharmacist-led project where nurses were key to implementing new anemia guidelines in the clinic and educating staff.

To evaluate an educational tool for staff describing new guidelines for the treatment of chemotherapy-induced anemia at Ohio State University Medical Center by measuring treatment and practice efficiency. To evaluate a reminder/educational tool for patients as measured treatment compliance.

A multidisciplinary team reviewed the literature and National Comprehensive Cancer Network guidelines on treatment of anemia before drafting guidelines specific to our clinic and study objectives. Data supported using darbepoetin alfa every 2 weeks (Q2W), or every 3 weeks (Q3W) with earlier intervention. In the new guidelines, hemoglobin  $<11\text{g/dL}$  vs  $<10\text{g/dL}$  was the new threshold for starting on-time. Recommended darbepoetin alfa dosing was 200 mcg Q2W SC or 300 mcg Q3W titrated to maintain hemoglobin levels between 11 and 12 g/dL. Physicians, nurses, and pharmacists were instructed on the efficacy and indications for each administration. To help, a dosing guideline decision-tree pocket card for staff and a treatment-reminder card for patients and caregivers were developed.

The decision-tree and treatment-reminder cards will be presented. Final results (in progress) will focus on physician/nurse-practitioner compliance to the new anemia guidelines and patient compliance to treatment visits from December 2004 (guideline implementation date) to December 2005. Preliminary results indicate that the treatment-reminder cards helped to minimize the number of missed appointments.

Oncology nurses and pharmacists partnered to develop and implement new anemia therapy guidelines. Nurses played an essential role in guideline implementation and education of clinic staff. Our decision-tree pocket card helped increase familiarity with new guidelines and paved the path to physician acceptance. These guidelines were easy to understand and have empowered nurses to become more active providers of supportive care.

## 124

**IS YOUR CHEMOTHERAPY PATIENT IRON DEFICIENT?** Loretta Morehead, RN, BSN, OCN®, Genentech, Colorado Springs, CO; and Vandalyn McNulty, RN, BSN, Anne Zobec, RN, MS, NP, and Brenda Hicks, RN, OCN®, Cancer Center of Colorado Springs, Colorado Springs, CO.

Oncology nurses play a key role in initiating and managing treatment of cancer patients with chemotherapy-induced anemia (CIA). Erthro-

poiesis-stimulating proteins (ESPs) are one treatment for CIA; however, 30-50% of patients started on ESPs do not achieve meaningful responses to ESPs because they have iron deficiency. ASCO/ASH and NCCN anemia treatment guidelines recommend thoroughly evaluating the cause of anemia before initiating treatment, including evaluation of iron status. As interpreting iron laboratory tests is difficult, oncology nurses can benefit from having greater understanding of erythropoiesis, especially the importance of iron status.

Educate oncology nurses about iron physiology specific to oncology patients, its role in erythropoiesis and the impact of chemotherapy on erythropoiesis using visual aids so they can be more informed patient advocates.

Our presentation will help oncology nurses better understand the role of iron in erythropoiesis management in CIA patients and the common laboratory tests to diagnose iron deficiency and related changes in complete blood counts. We will describe the stages of iron deficiency (depletion, deficiency without anemia, and iron-deficient anemia) and the types of iron (functional, storage, and transport). Visual aids will be provided to help the nurse understand how the laboratory evaluation relates to the measurement of proteins that transport or store iron in the body.

After viewing the poster, the nurse will be able to: describe the basics of iron metabolism and how erythropoiesis in chemotherapy patients is impacted by inadequate iron stores; identify appropriate laboratory tests to evaluate iron status before starting chemotherapy in high-risk patients; recognize indicators of iron deficiency in all patients starting erythropoietic therapy; and effectively advocate for iron supplementation to maintain or replete stores in CIA patients.

While ESPs have significantly improved CIA management, iron-deficient patients are often not identified until they fail to respond. This delays clinical improvement in hemoglobin levels and quality of life for the patient and increases costs due to inappropriate use of ESPs. Nurses who understand iron's critical role in erythropoiesis will be better prepared to effectively advocate for early iron testing in chemotherapy patients and appropriate use of ESPs.

## 125

**IDENTIFICATION OF AN ORAL ASSESSMENT TOOL AND DEVELOPMENT OF A PATIENT EDUCATION GUIDE TO ORAL MUCOSITIS.** Michelle Luke, BSN, RN, OCN®, Northwestern Memorial Hospital, Chicago, IL.

Oral Mucositis (OM) refers to the inflammation of the mucosa. Incidence of mucositis ranges from 30-40% of patients receiving chemotherapy and increases to 50-80% of those receiving high dose chemotherapy and radiation therapy. Mucositis affects quality of life causing pain, difficulty or inability to eat and/or swallow, infection, decrease or delay in chemotherapy treatment, and in some cases death.

Northwestern Memorial Hospital does not use a standardized Oral Assessment Guide or Tool to assess patients' oral mucosa. Staff nurses were not adequately assessing and educating patients on OM. Adapting an assessment tool into our standard charting regimen would help to identify mucositis in our patients and enable nurses to educate and implement interventions.

Best Practices were identified through review of the literature, which included an Oral Assessment Guide, healthcare education, and patient education. A PowerPoint was created titled "Education Guide to Pathophysiology, Assessment, and Management of Oral Mucositis" to educate staff. Two oral assessment tools were introduced and education was provided to staff on implementation. A trial on the unit by staff nurses of the Oral Assessment Guide (OAG) by June Eilers and the NCI Common Toxicity Criteria Tool were performed. The staff was then given a survey comparing the effectiveness of the two tools. A patient education guide was then created to help increase patient involvement in maintaining proper oral hygiene.

An Evaluation Questionnaire was handed out to staff nurses and a discussion session was held. Data was collected on ease, time, effectiveness, benefits/disadvantages, and improvement of patient outcomes. The majority of staff picked the OAG by J. Eilers due to its ease and effectiveness for a thorough assessment.

Implementing a standard OAG will help to improve patient outcomes. Next steps would include educating all oncology units on properly using the OAG, adapt to online charting system, and continuing to educate staff and patients. The nurses will have the skills to access and implement

plans of care and enable patients to take an active role in assessing and maintaining proper oral hygiene. This will help to increase quality of life by helping to decrease pain and better manage infection.

## 126

**ACHIEVING EXCELLENCE THROUGH CONSISTENT PRACTICE: A NURSE DRIVEN EFFORT TO IMPROVE THE MANAGEMENT OF ORAL MUCOSITIS.** Krista Rowe, RN, MSN, OCN®, and Tracy Gosselin-Acomb, RN, MSN, AOCN®, Duke University Hospital, Durham, NC.

Oral mucositis (OM) is a frequent and potentially life threatening complication of cancer therapy. Though the cause and duration of the injury may vary, oncology nurses across all treatment settings routinely care for individuals who are at risk for developing OM. Current evidence and guidelines stress the importance of a consistent method of assessment, management, and education; however, there is only a modest amount of literature available that addresses the identification of a universal nursing approach to this debilitating side effect of cancer therapy.

There are many barriers to the treatment of OM identified in the literature including: gaps in knowledge, reliance on ritual, inconsistent/absent assessment, varied oral care regimens, and lack of multidisciplinary partnership (McGuire, 2003). The purpose of this project is to identify a consistent oral assessment tool to be used by nurses practicing in all arenas of oncology and implementation of an oncology specific standard of care for the assessment and management of OM in the oncology patient population.

A total of fifty oncology nurses across all practice settings within this tertiary center completed a survey that included demographics, a problem awareness assessment, and four established oral assessment tools. Participants were asked to identify one patient during a four week period of time and complete the survey in its entirety. In addition, participants were asked to complete a Likert-type rating of each individual tool to measure ease of use, time requirement, and thoroughness of the assessment. In conclusion, participants identified one tool as the most user-friendly and appropriate for their practice setting.

Demographic, tool specific, and nurse preference data were analyzed and interpreted using descriptive statistics to identify the tool perceived to be the most effective and practical for use in all patient care settings.

Oncology nurses have the potential to make significant contributions towards improving the care of patients at risk for OM undergoing cancer therapy. By identifying a consistent tool for assessment through nurse-driven research, education, and partnership the groundwork can be laid for the development of an evidence-based oncology specific standard of care that will ultimately improve outcomes for oncology patients within this institution.

## 127

**AWARENESS AND PREVENTION OF OSTEONECROSIS OF THE JAW WHILE RECEIVING BISPHOSPHATES.** Margaret Reilly, NP, APRN, BC, New York University Clinical Cancer Center, New York, NY.

Prostate cancer is the most commonly diagnosed cancer among men and the second most common cause of cancer related deaths in men. One out of every six men will get prostate cancer. Patients with prostate cancer are at high risk of developing bone metastases and developing skeletal complications.

Intravenous bisphosphonates have been shown to reduce skeletal complications of bone metastases from solid tumors, including prostate cancer. Recent reports have suggested an increased risk of osteonecrosis of the jaw in patients receiving bisphosphates.

Symptoms of Osteonecrosis of the jaw may not appear for many weeks or months.

Typical signs and symptoms include pain, soft-tissue swelling and infection, loosening of teeth, drainage, and exposed bone, which may occur spontaneously or, more commonly, at the site of previous tooth extraction.

Less common symptoms may present as numbness, feeling of a heavy jaw and various dysesthesias (impairment to sensitivity especially to touch).

Osteonecrosis of the jaw is a rare potential complication in cancer patients receiving chemotherapy, steroid therapy and intravenous bisphosphonate.

Patients will be monitored and assessed for signs and symptoms of osteonecrosis of the jaw. Dental evaluation will be required prior to

initiating bisphosphates. Patients will be assessed for maxillofacial pain prior, during and post therapy.

Patient education materials will be given to patients.

Preventive measures will be initiated prior to the start of treatment and throughout therapy.

A maxillofacial pain scale will be evaluated prior to treatment and at each visit.

New start patients will be assessed for the effectiveness of implementing preventive measures for developing osteonecrosis through evaluation of a decrease in incidence of this potential complication.

Oncology Nurses will encounter patients in their practice who have received or will receive bisphosphate therapy and education on awareness and prevention of osteonecrosis is essential in order to develop treatment guidelines.

## 128

**DON'T BE CONFUSED! ASSESSMENT OF ELDERLY SURGICAL PATIENTS' MENTAL STATUS CAN PREVENT ADVERSE EVENTS AND IMPROVE OUTCOMES.** Hyacinth Gordon, RN, BSN, CRRN, MSN, OCN®, and Joann Mick, RN, MSN, MBA, AOCN®, CNA, BC, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Confusion, a common condition that can develop in elderly hospitalized patients, is often overlooked or misdiagnosed. Acute confusion is characterized by sudden onset and a fluctuating course of changes in consciousness and cognition. Manifestations include: inability to focus, sustain or shift attention; disorientation; impairments in learning; and memory or language difficulties. Perceptual disturbances such as illusions, delusion and hallucinations are often present.

Research studies support a link between confusion and adverse outcomes, such as compromised recovery, increased mortality, and prolonged length of stay. Recent studies indicate that confusion occurs in as many as 61% of surgical patients. Oncology nurses must be alert to detect evidence of inattention, altered mental status, disorganized thoughts or speech, and decreased alertness.

A detailed, mental status assessment is not always included in a routine admission assessment. A retrospective review of medical records of 22 patients who became confused during their stay on our inpatient surgical oncology unit revealed that a detailed mental status assessment had not been performed. Short, reliable, easy to use tools, such as the Mini Mental State Examination and the Short Portable Mental Status Questionnaire (SPMSQ) are available for use by nurses to supplement questions on admission assessment forms. After providing education regarding instrument use, the SPMSQ was implemented as a supplemental tool to improve assessment and documentation of mental status in our surgical oncology population.

The literature supports that prompt identification and aggressive treatment of confusion in the elderly surgical patient are key factors to prevent poor outcomes. Our poster will share evaluation findings after implementation of the SPMSQ to improve assessment, early identification of symptoms of confusion, and documentation of mental status assessments on our unit.

It is critical that oncology nurses establish a baseline mental status assessment of all elderly patients admitted to the hospital. Early identification of at risk patients may provide opportunities for early intervention to prevent adverse events and improve outcomes. Additional research is needed on assessment and management of confusion in elderly patient populations.

## 129

**NEUROLOGICAL PARANEOPlastic DISORDER (NPND): UNDERSTANDING THE TREATMENT AND SUPPORTIVE CARE OF PATIENTS.** Dionne Savage, BSN, RN, Johns Hopkins Hospital/SKCCC, Baltimore, MD.

NPNDs are rare disorders affecting the peripheral or central nervous system as an indirect result of malignancy. High serum and cerebrospinal fluid antineuronal antibody titers cause neurologic destruction and cause a wide range of symptoms. The onset of neurological symptoms and detection of antibodies often precedes the diagnosis of cancer. Patients with the specific NPND termed "Stiff Man Syndrome" present with upper and lower extremity weakness, gait disturbances, numbness and tingling in hands and feet, and loss of deep tendon reflexes. More extensive involvement produces symptoms such as swallowing difficulties, diminished

ability to speak, and paresis. Patients also experience painful muscle spasms that interfere with voluntary movement. Neurologic symptoms may improve with anti-neoplastic treatment, although some neurologic impairment may be irreversible.

This presentation provides an overview of the NPND's and a detailed description of a case study, outlining optimal patient care. Thorough nursing assessment can lead to early targeted supportive therapy for maximum symptom management and enhanced coping strategies.

This case example patient initially presented to healthcare providers with dysphagia, mutism, and progressive ataxia. After exhaustive diagnostic tests, he was incorrectly diagnosed and administered antimicrobials. The patient's symptoms worsened and five months later he was referred to this NCI designated Comprehensive Cancer Center exhibiting total body stiffness with positive neuro-antibodies and testicular cancer. During his hospital stay, nurses were the coordinators of care that involved professionals in physical therapy, occupational therapy, speech and swallowing therapy, respiratory therapy, developmental specialists, and social work. Despite effective anti-neoplastic treatment inducing disease remission, his neurologic symptoms did not resolve and required subsequent mechanical ventilation with related complications that led to his death.

Neurologic experts, physical, and occupational therapy were crucial in providing emergent support of this patient's neurologic symptoms. The pivotal role of the nurse in coordinating these multidisciplinary efforts was at least partly supported by the nurse's knowledge and expertise in management of this unusual complication of malignancy.

NPND can be a debilitating and fatal disorder when detected in its late stages. Educating oncology nurses about NPND can facilitate more timely and focused interventions that could improve clinical outcomes/quality of life.

## 130

**HELPING NURSES UTILIZE COMPUTER-BASED APPLICATIONS.** Karen Lipshires, RN, Massachusetts General Hospital, Boston, MA.

Use of computer-based applications is becoming common in the oncology setting. The increasing numbers of oncology patients being treated in the ambulatory setting require that providers be adept with tools that support their practice. Such applications can include Computerized Order Entry, Electronic Medical Record, protocol documents libraries, e-mail systems, patient tracking and scheduling software, and electronically created and stored teaching tools. Many of the nurses in the Infusion Unit obtained formal education and began their practice prior to the routine use of electronic information systems. Literature review reveals that many nurses admit to lacking skills necessary to fully utilize the applications available thus creating a need for computer based mentoring in the clinical setting.

The purpose of the mentoring position is to bridge the gap between the use of computer based application in caring for the patient and nurses now practicing in an electronic environment. Having this position embedded within the infusion unit allows for a comprehensive understanding of the unique workflow considerations. Requirements for the position were a nurse with oncology experience and an expertise with clinical applications. Initially, the role involved participation on the team responsible for creating the computer-based chemotherapy ordering templates. The role has evolved to include providing much of the computer application education, participation in quality improvement initiatives, and participation in enhancement development.

Unit leadership identifies core computer competencies for new employees. Teaching methods utilize Knowles theory of adult learning. Individualized hands-on instruction, reinforced with computer based training modules, is the primary method of education for new hires and new applications. PowerPoint presentations and lecture-style demonstrations are used to help familiarize nurses with the enhancements.

Infusion Unit nurses increasingly identify opportunities to utilize computer applications to support their practice. Increased recognition, increased utilization, and expansion of the role reflect the effectiveness of such a mentoring position.

A unit-based nursing informatics role can provide education and support to clinicians in the ambulatory oncology setting. In addition, by working closely with oncology providers, the informatics nurse can facilitate the feedback process and bring the voice of the end-user to the development setting.



### 131

**A NURSE MANAGED REFERRAL SYSTEM: APPLYING NURSING SKILLS TO A COMPUTERIZED SYSTEM.** Melissa Gomez, RN, BSN, OCN®, Memorial Sloan-Kettering Cancer Center, New York, NY.

Expert oncology nurses perform telephone triage of adult leukemia patients who are seeking care at this NCI designated comprehensive cancer center. Given the aggressive nature of acute leukemia, nurses are required to evaluate new patients to determine the acuity of the disease. Until recently, patient referral information was documented on paper and stored alphabetically in a binder. The binder was voluminous and not accessible to all nurses. Because different nurses managed the referral system, there was a lack of continuity and insufficient information to determine the status of the referral. Administrative staff and attending physicians found it difficult to decipher the information in order to schedule a timely office visit. Even with adequate documentation it was time consuming and difficult to read the large amount of written documented dialogue. It was essential to develop a new standardized tool, and to carry out a nursing education initiative for utilization and consistent implementation of the tool.

The purpose of this project was to develop a data collection tool that is accessible, effective, and rapidly identifies the status of a new patient referral.

A multidisciplinary effort which included support from hospital administration, hospital information systems, department of nursing, and physician staff, led to the adoption and modification of Patient Access Service (PAS), a computerized referral system. The leukemia nurses were educated regarding utilization and implementation of the new referral tool.

A blind survey was performed, showing leukemia staff satisfaction and a faster turnover time in scheduling new patient appointments, leading to improved patient satisfaction. It has enabled our nurses to maximize time management and improve communication among colleagues.

This electronic data collection tool improves patient care by easily identifying patient needs. The PAS system is easily accessible throughout the center and provides a standard that improves continuity of nursing documentation. It generates daily e-mails with patient referral status and nursing interventions. Patient care is improved not only by our oncology nursing skills, but also by the system that supports and enhances those skills. The PAS has been a welcome addition to the leukemia service and has improved the referral process at our center.

### 132

**A PILOT PROJECT TO ASSESS THE IMPACT OF WIRELESS TECHNOLOGY ON INPATIENT WORKFLOW AND COMMUNICATION.** Elizabeth Ryan, BSN, RN, Blanca Vasquez-Clarfield, MA, RN, and Dorothy Dulko, MS, PhD(c), RN, NP, AOCN®, Memorial Sloan-Kettering Cancer Center, New York, NY.

Delivering inpatient oncology care is a multifaceted process that requires interdisciplinary collaboration and frequent communication among physicians, nurses, and ancillary staff. These interactions often take place outside of the central nursing unit and away from telephone access. Novel ways of optimizing the effectiveness of workflow and communication are necessary to ensure quality patient care.

In order to evaluate the efficiency of an inpatient unit communication system, this NCI-designated cancer center introduced and installed a new hands free, voice recognition, wireless communication system. The system uses a small wearable badge and permits one button access to others on the network or connects to phone lines both inside and outside of the hospital.

A pilot project was conducted to measure the impact of wireless technology on workflow, communication and delivery of nursing care. A written survey was distributed to 64 nursing staff four months after the initiation of the system. The survey aimed to quantify the acceptance of the technology by staff and to determine to what extent they considered it an important tool in improving patient care and workflow. System evaluation targeted specific areas of impact such as the reduction of overhead paging, increased accessibility to staff when assistance is required at patients' bedside, and preferred methods of communication both on and off of the unit.

Fifty-six staff members completed the survey. 91% agreed or strongly agreed that the system reduced the disruption of overhead paging, while 84% reported that the technology facilitated communication between unit staff. 82% stated increased accessibility to other staff for bedside

assistance; with 75% of respondents expressing a positive effect of the system on workflow.

Inpatient oncology care is a complex communication environment involving a large number of people and unexpected events. As a result, healthcare delivery has become progressively reliant on information technology. Our preliminary data indicate that a voice-based wireless communication system may have a positive effect on inpatient nursing workflow and communication.

### 133

**THE FUTURE IS NOW: ELECTRONIC COLLECTION OF PATIENT REPORTED OUTCOMES.** Ann Culkun, RN, OCN®, and Ethan Basch, MD, MSc, Memorial Sloan-Kettering Cancer Center, New York, NY.

Symptom monitoring is a fundamental component of cancer care and clinical research. Oncology nurses routinely elicit and record patients' symptoms during chemotherapy. This information is used to assess disease, treatment experience and treatment outcome. A collaborative development of a web-based platform was developed to collect patient symptoms. A core set of symptoms was selected based on their perceptibility for cancer patients receiving cytotoxic chemotherapy regardless of cancer type utilizing the CTCAE (NCI Common Terminology Criteria for Adverse Events) (3).

There is growing momentum for patients to self-report symptoms without intermediate clinician filtration. (Basch, 2005). Various methods have been used to collect patient reported outcomes. A web-based design utilizing Symptom Tracking and Reporting (STAR) was initiated for patients receiving cytotoxic chemotherapy. This system allowed patients to enter and track their own symptoms based on the CTCAE.

A questionnaire was developed with a grading scale using items from the NCI CTCAE, version 3. These included anorexia, constipation, diarrhea, fatigue, nausea, pain and vomiting. In addition, disease-specific items pertinent to lung cancer (cough, dyspnea) were chosen for use in the unique patient population. Outpatients were approached by a research study assistant to complete the questionnaire in waiting areas. A report was then generated for review by the clinician at their visit.

In patients with lung cancer, there were discrepancies in clinician reporting and patient reporting most significantly in fatigue, dyspnea, and pain, while there was most agreement on cough, anorexia, and constipation (Basch, 2005). Across all symptoms, it was more common for patients' to grade higher symptom severity than clinicians.

Integration of patient self-reporting into toxicity monitoring systems may improve patient safety and data quality (Basch, 2005). Patient reported outcomes may facilitate earlier toxicity reporting. In patients with lung cancer, when compared to other disease-specific malignancies, it was noted that this population of patients was less web-avid, and more acutely ill. In an ideal clinical setting, oncology nurses would be provided access to their patient's reports in order to improve symptom management and foster discussion related to patient outcomes.

### 134

**INCORPORATING THE RISK FACTORS FOR CANCER- AND CANCER TREATMENT-RELATED SYMPTOMS INTO AN ELECTRONIC ASSESSMENT TOOL: MORE GAIN, LESS PAIN FOR ONCOLOGY NURSES AND THEIR PATIENTS.** Nancy L. Henderson, RN, BSN, OCN®, and Mary Lynne Mundo, RN, BSN, OCN®, West Michigan Cancer Center, Kalamazoo, MI.

The Patient Encounter is a computer-assessment tool that was designed by a multi-disciplinary group of oncology nurses at our community cancer center to monitor patients during their treatment for cancer. It has a two-fold purpose: (1) to record symptom and symptom-management information; (2) to obtain patient outcomes. The Patient Encounter is divided into evidence-based groups for assessments that include pain, nausea and vomiting, fatigue, anemia, and neutropenia. In 2005, the Centers for Medicare and Medicaid Services (CMS) initiated a demonstration project aimed at improving the management of pain, nausea and vomiting, and fatigue. The nurses documenting these symptoms for the CMS observed that improvements could be made to the Patient Encounter to make patient outcomes readily available for nurses and other health personnel. This would enable better communication between medical personnel and optimize the management of our patients.

(1) To evaluate the management of fatigue, pain, and nausea. (2) To improve the management of our patients by incorporating risk assessments and interventions for these symptoms into the Patient Encounter.

We performed a retrospective chart review of Medicare patients receiving chemotherapy and evaluated how well we managed fatigue, pain, and nausea. The 3 symptoms were assessed using the CMS 4-point scale: 0(not at all), 1(a little), 2(quite a bit), and 3(very much).

Fifty-eight percent of patients with fatigue, 75% of patients with pain, and 87% of patients with nausea reported scores between 0 and 2.

The management of pain and nausea in older patients attending our cancer center is good. However, 42% of these patients reported severe fatigue, and the management of fatigue in these older patients required improvement. Our goal is to incorporate the National Comprehensive Cancer Network (NCCN) risk assessments and required interventions for cancer-related fatigue and anemia into the Patient Encounter. This will enable oncology nurses to identify patients with anemia-associated fatigue who may benefit from erythropoietic therapy. In the long-term, we aim to include risk assessments and interventions for other symptoms, such as neutropenia, into the Patient Encounter.

### 135

**WEB-BASED INTERVENTIONS IN ONCOLOGY: MAINTAINING TREATMENT FIDELITY.** Kristin Roper, RN, MS, OCN®, Dana-Farber Cancer Institute, Boston, MA, and Sheila Judge Santacroce, PhD, APRN, CPNP, Yale University School of Nursing, New Haven, CT.

Treatment fidelity has been described, explained, and investigated in clinical trials in the field of behavioral science almost exclusively. The assessment of treatment fidelity is essential for clinical trials because it demonstrates that an intervention is conducted as intended. Oncology nurse researchers are using web-based support groups more frequently to assist and educate cancer patients before, during, and after treatment. It is therefore vital that the integrity of web-based oncology interventions be established.

The purpose of this presentation is to discuss the Technology Model as a framework to evaluate and monitor nursing interventions conducted over the Internet.

A computerized review of the literature was conducted from 1991 to 2005, using Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, and PsychInfo databases. Published research reports reviewed examined the use of web-based interventions for psycho-education, coping skills training, and self-care management.

The literature describes common threats to the receipt and delivery of web-based interventions ranging from incidental technical difficulties creating slow transmission speeds to poor typing skills that create lag times and interfere with spontaneity. The Technology Model identifies three major fundamental requirements for monitoring the fidelity of clinical interventions: (1) specification of behavioral treatments in manuals; (2) therapist training; and (3) monitoring of treatment delivery. The first step in monitoring interventions is to include a detailed treatment manual of intervention logistics that creates an environment that fosters the consistent delivery of an intervention. Descriptions of study design, format structure, script instructions, intended dose, intervention frequency, timelines, and cost should be included in a manual that can be housed on internet web-sites. Secondly, standards for the ongoing supervision and evaluation of therapists in terms of skill level and treatment adherence to established guidelines can contribute to the precise delivery of an intervention. Training can involve participation in creative scenarios with computer-based role-playing sessions and the debriefing of transcribed communications. Lastly, the monitoring of web-based interventions can include the review of text communications for adherence to guidelines and oversight of therapist competence.

Oncology nurse researchers who apply the Technology Model can help ensure intervention fidelity and sound empirical nursing research.

### 136

**ACCURATELY MEASURING TEMPERATURES IN CRITICALLY ILL ONCOLOGY PATIENTS.** Mary Ellen Reese, RN, Tracy Douglas, RN, MSN, OCN®, Karen Hauck, RN, BSN, Richard Mallik, RN, BSN, Mary Melvin, RN, Jill Roman, RN, BSN, Ellen Saltzman, RN, BSN, and Jennifer Fury, RN, BSN, Johns Hopkins Hospital, Baltimore, MD; and Julie Bauder, Johns Hopkins University School of Nursing, Baltimore, MD.

Temperature measurement in critically ill oncology patients is crucial for effective management. In the past, temperatures have been measured via axillary measurements. These measurements have been unreliable. Oral measurement of temperature is not routinely done in patients who are intubated or have an oxygen face mask. Many intensive care units use

rectal thermometers to measure temperature. These are contraindicated in our setting. Using a urinary catheter temperature thermometer will prove to be a reliable and safe method of capturing a fever.

The purpose of this performance improvement project is to compare the use of urinary catheter thermometers with oral and axillary methods of measuring critically ill oncology patients' temperatures.

All patients requiring a urinary catheter and on oxygen greater than 60% will have a urinary catheter thermometer placed. A bladder, oral and axillary temperature measurement will be recorded every four hours. Bladder temperatures by the urinary catheter thermometer will be recorded continuously by physiological monitoring systems. The performance improvement project will continue until 1000 urinary catheter temperature measurements are taken or the measurement of 20 patients (which ever comes first). At least 250 measurements or five of the patients are to have a urine output >720ml in 24 hours (30ml/hr in 24 hrs.). The remaining measurements are to be done on patients who are oliguric or anuric. No patient will have more than two weeks worth of measurements. Each patient must have a temperature foley greater than or equal to 24 hours in order to be included in the study.

Temperature measurement greater than 38°C twice in 2 hours or greater than or equal to 38.3°C will be acted upon. The early capturing of a fever will enable the nurse to alert the physician to start fever management and antibiotic therapy as soon as possible.

Fever may be the first indication of infection in a patient with a suppressed immune system. Urinary catheter thermometers will allow the temperature to be monitored continuously in the neutropenic and thrombocytopenic patient.

### 137

**IMPROVING COMMUNICATION FOR CRITICALLY ILL ONCOLOGY PATIENTS THROUGH THE USE OF A "DAILY GOALS" COMMUNICATION TOOL: ADHERENCE TO JCAHO PATIENT SAFETY GOAL 2.** Tracy Douglas, RN, MSN, OCN®, Brenda Shelton, RN, MS, AOCN®, CCRN, and Allison Murter, RN, MSN, Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, Baltimore, MD; William Matsui, MD, and Rex Yung, MD, Johns Hopkins School of Medicine, Baltimore, MD; and Kathy Shane, RN, BSN, Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, Baltimore, MD.

One unique feature of the Sidney Kimmel Comprehensive Cancer Center (SKCCC) is the capacity for all inpatient beds to be converted into critical care rooms. This allows patients to remain in the SKCCC and maintain continuity of care with the oncology multidisciplinary staff. In these instances, critically ill patients are co-managed by a pulmonary/critical care attending and fellow in conjunction with the primary medical oncology team. Communication is imperative for safe and quality critical care, and this concept has been emphasized by the 2006 guidelines provided by the Joint Commission on Accreditation of Healthcare Organizations. Goal 2 of these guidelines is to improve the effectiveness of communication between caregivers, more specifically to standardize processes of communication and allow questions and answers of the caregivers. Similarly, the Johns Hopkins Hospital has developed eight safety goals. One of these is to improve communication, and another is to improve teamwork. Furthermore, safety literature supports that improvements in process are equally important as technical improvements in dictating critical care outcomes.

Our team focused on improving communication and processes among the pulmonary, oncology, nursing, and respiratory staff during the care of critically ill patients within the SKCCC. Importantly, the goals of these measures are to better and more uniformly implement the technical choices made for critical patients.

We developed a Daily Goals Sheet (DGS) to formalize and document discussions made during morning patient rounds. The charge nurse or a clinical nurse specialist completes the DGS that specifically addresses the patient's therapeutic goals. The Oncology and Pulmonary/Critical Care Fellows read the DGS, agree or make corrections, and sign it. The DGS is then given to the nurse who can monitor the patient's progress for each of the listed goals. The DGS is reevaluated each evening by the pulmonary fellow, an oncology team member, and the patient's nurse to assess whether the daily goals have been met and/or to identify barriers that have prevented attainment of these goals.

Evaluation is ongoing and will be presented at the ONS Congress.

Using a DGS as a tool to formalize communication will improve multidisciplinary teamwork and patient care outcomes.

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**INTENSIVE RESPIRATORY CARE AND NONINVASIVE POSITIVE PRESSURE VENTILATORY SUPPORT IN A NCI DESIGNATED CANCER CENTER: EVALUATION OF RECENT CLINICAL PRACTICE.** Brenda Shelton, RN, MS, CCRN, AOCN®, Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, Baltimore, MD; Julie Jablonski, BSN, RN, York College Graduate School of Nursing, York, PA; and Marie Swisher, MSN, RN, and Cheri Wilson, MA, PhD(c), Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, Baltimore, MD.

Mechanical ventilation (MV) in immunocompromised patients is associated with significant morbidity and mortality. Non-invasive ventilation (NIV) is a form of ventilatory support without the use of an endotracheal tube. A mask is applied and continuous positive pressure (CPAP) with or without inspiratory pressure support (BiPAP) can be provided. Recent research on the role of NIV in immunosuppressed patients is still limited. The use of NIV support allows for less patient sedation, more verbal communication, and expression of treatment wishes, along with a decreased risk for the development of ventilator associated pneumonia.

Clinicians at this NCI designated Comprehensive Cancer Center assessed the implementation of high flow oxygen masks and CPAP/ BiPAP as effective alternative respiratory support for patients with respiratory failure from January 2005 to present.

Charts of patients who received a 100% non-rebreather mask, CPAP/ BiPAP, and/or mechanical ventilation from January 2005 to present were reviewed. Data was collected on the number of hours from NIV to the point of endotracheal intubation, recovery, or death.

Data was assessed on the implementation of alternative respiratory support and its efficacy in 108 patients. In these data, 66 patients required MV. Approximately 52% of the total patients died, 16% lived to have respiratory care needs resolved, and 25% were discharged from the hospital. Data suggests that most patients, who progress to MV, do so within 48 hours of initiation of intensive support. NIV was implemented in 20 patients, effectively avoiding MV in seven patients, allowing time to obtain orders to limit resuscitation in two patients, and as abridge to assist post-MV in five patients. This data analysis was used to develop an evidence-based clinical pathway for identifying candidates for NIV.

Selected patients receiving CPAP/ BiPAP instead of MV may experience reduced complications of invasive ventilatory support, provide time to correct underlying respiratory compromise, and allow family and healthcare providers to interact with patients to address end of life wishes. Quality outcomes support consideration of NIV as an alternative to MV in patients with respiratory failure and cancer.

## 139

**SUCCESSFUL INTEGRATION OF CRITICAL CARE NURSING ON A HEMATOLOGICAL MALIGNANCY UNIT.** Lyle Baker, RN, BSN, Johns Hopkins Hospital, Baltimore, MD.

Hematological malignancy patient can present with leukostasis, tumor lysis syndrome and infections. Their illness and intensive chemotherapy regimens can cause them to become critically ill. In our comprehensive cancer center, a critical care is defined as mechanical ventilation, titration of vasopressors, and treatment of unstable dysrhythmias. Therefore, nurse caring for these patients must be critical care competent.

Training and maintaining competent critical care oncology nurses is challenging. The range of patient acuity levels includes acutely ill patients receiving intensive chemotherapy regimens, to critically ill patients on life support. Providing critical care frequently enough to retain competency is another challenge.

Once a nurse demonstrates competency in the care for acutely ill patients, he practices at this level for approximately six months. A critical care readiness exercise is used to determine if the nurse demonstrates effective critical thinking skills and can prioritize patients' needs in different clinical scenarios. Once the nurse is ready for critical care training, he attends the Hospital's generic critical care course. The Oncology Critical Care Clinical Nurse Specialist (OCCNS) provides the staff with textbooks and lectures for these courses. After completing the courses, the nurse must take and successfully complete three exams: pharmacology, electrocardiogram interpretation, and core that include organ system questions. The next step is two weeks of orientation in critically ill patients' room with a primary preceptor, who is responsible for assuring that the nurse

can independently and safely care for critically ill patients, including clear articulation of patient assessments and care needs.

The OCCNS attends multidisciplinary morning rounds on all critically ill patients and is a resource to new critical care nurses. She provides critical care inservices and annual critical care competencies. Mock codes ensure competency in emergency situations. The Center's Multidisciplinary Intermediate and Critical Care Committee establish oncology critical care standards and protocols to monitor compliance.

Incorporating critical care into oncology nursing resulted in a higher level of skill for nurses, enhancing care for acutely and critically ill patients. Patient assignments are more varied resulting in increasing nursing satisfaction. And, continuity of care was enhanced, which is satisfying for the patient and their family.

## 140

**CHALLENGING THE STATUS QUO: USING A FINANCIAL BUSINESS PLAN AND NEW TECHNOLOGY TO INCREASE PATIENT ACCESS AND INSERTION SUCCESS WITH PERIPHERALLY INSERTED CENTRAL LINE CATHETERS (PICCS).** Mikaela Olsen, RN, MS, OCN®, and Sandra Johnson, RN, MS, Johns Hopkins Hospital, Baltimore, MD.

Oncology patients face many challenges during their journey. One of the most significant challenges is intravenous access (IV). Obtaining access for blood drawing or infusions invokes pain and suffering in patients already experiencing life-altering events. Peripherally Inserted Central Line Catheters (PICCS) inserted proactively in qualified patients improves safety, cost-effectiveness, and satisfaction of patients and staff.

Many patients were referred to the Oncology PICC team after venous access had become a serious issue. Patients had experienced tremendous suffering and complications such as phlebitis, cellulitis, and sclerosis of veins. The PICC team consisted of a dedicated group of nurses who attempted to place PICCs while also trying to complete their regular job responsibilities. New technology emerged which was essential for improving success with PICC insertions. Increased success rates led to increased referrals requiring dedicated PICC RN hours.

This designated comprehensive cancer center developed an inclusive strategy for improving access to all patients who were candidates for PICCs. A financial business plan was developed to assess current PICC insertion success rates, cost effectiveness, manpower needed, and outcomes such as catheter-related complications, safety, length of stay, and satisfaction of patients and staff. Additional resources were obtained to support this nurse driven service which included dedicated FTE's, new equipment, and the development of an on-line PICC database to track all activity related to the PICC team. An educational plan for staff and patients was developed which incorporated care of PICC lines and new technologies.

Clinical outcomes were measured and will be reported. There were statistically significant improvements in PICC line insertion success rates, as well as other outcome measures, which will be reported.

The PICC team at this institution has grown tremendously and has allowed all patients to now have access. Patients are assessed upfront using an algorithm to determine the appropriate form of venous access and to avoid injury to existing veins. A nurse driven oncology PICC team is a vital part of any cancer program and should be accessible to all patients. Using a formalized approach for the development of this program is essential to its' long-term success.

## 141

**PREVENTING INTRAPERITONEAL PORT (ABDOMINAL MEDIPORT) RELATED COMPLICATIONS: EFFICACY OF EVIDENCE-BASED TREATMENT GUIDELINES.** Robin Green, RN, BSN, MSN, OCN®, New York University (NYU) Hospitals Center, New York, NY; Andrea Downey, RN, MA, NYU Cancer Institute, New York, NY; Kathleen McCaffrey, RN, MSN, and Eileen Fusco, RN, NP, NYU Hospitals Center, New York, NY; and Franco Muggia, MD, NYU Cancer Institute, New York, NY.

Intraperitoneal (IP) chemotherapy is a concept based on pharmacologic principles and our knowledge of patterns of spread of certain cancers. Recent clinical trials have made it desirable to explore adjuvant consolidation IP therapy in those patients with peritoneal spread of disease following "chemical cytoreduction" with intravenous chemotherapy. However, the technical demands of IP chemotherapy often pose a challenge to the nursing staff. Comprehensive evidenced-based IP chemotherapy nursing guidelines were needed to diminish variability in practice among the staff.



Measure the efficacy of IP Chemotherapy guidelines in preventing/minimizing port-related complications.

At this NCI-designated ambulatory cancer center we routinely administer IP treatments. Our guidelines were based on a review of the literature, as well as the extensive personal experience of the Oncology Nurse Specialists. Since IP chemotherapy can be technically challenging, the nurses often refer to the guidelines for a quick “refresher” course on the clinical procedure and to assist with problem solving strategies.

We reviewed the records of those patients whose IP therapy was discontinued. Abdominal pain and/or fever were the best indicators of why the IP therapy was stopped. In the future, monitoring the numbers of infectious episodes is one method we can use to evaluate the long-term efficacy of the IP treatment guidelines. We have requested that the physicians keep us informed of all port-related complications necessitating the discontinuation of therapy.

The use of IP chemotherapy has been associated with a survival benefit. In the future, oncology nurses may see an increase in this treatment modality in their clinical practice. Implementing standardized evidence-based treatment guidelines will help to ensure consistency in nursing practice and improved patient outcomes. One of the limitations of the study was the difficulty in distinguishing a bacterial peritonitis from a “chemical” peritonitis. We categorized a bacteria “negative” pelvic washing as chemical peritonitis, and not of infectious nature. Another limitation was that some of our patients received one or more of their IP treatments outside the Cancer Center, usually in the inpatient setting.

## 142

**DECREASING BLOOD CULTURE CONTAMINATION RATE IN THE OUTPATIENT SETTING.** Leslie Smetzer, RN, BSN, OCN®, Cancer Therapy and Research Center, San Antonio, TX; Barbara Owens, PhD, RN, OCN®, University of Texas Health Science Center School of Nursing, San Antonio, TX; and Buddy Matthews, RN, Larry Evans, BSN, RN, and Holly Nefford, MA, Cancer Therapy and Research Center, San Antonio, TX.

Contaminated blood culture results can lead to unnecessary antibiotic treatment, which in turn may also lead to resistant bacterial strains. In most hospital settings a specific team of trained staff are used to obtain blood cultures.

The purpose of this project has been to decrease the number of contaminated blood culture specimens in the outpatient setting by utilizing a team approach similar to that of an inpatient setting. In the outpatient oncology patient population it is essential that cultures be obtained appropriately to positively identify bacterial infections and decrease risk of treating patients unnecessarily with antibiotics. Blood culture results are also utilized to track the rate of implanted port infections at our facility.

At this NCI-designated cancer center, 256 blood cultures were obtained over a one-year period of time. Prior to implementation of this program the contamination rate for blood cultures was 19%. An implanted port competency procedure based on the ONS Access Device Guidelines: Recommendations for Nursing Practice and Education was implemented prior to beginning of this project with renewal of nursing staff competency every 6 months. Additionally, a strict competency procedure for blood cultures was developed and draw team members were designated. All team members were required to perform observed competency testing for blood cultures. During the next year all cultures were drawn following strict procedure with a goal set of less than or equal to 3% contamination rate.

Quarterly tracking of blood culture draws and results were done per the institution's Quality Assurance program. Review of one year of data showed an overall contamination rate of 1%. Decreased number of contaminated blood cultures by 18%. This decreased the use of antibiotic use for treatment of possible contaminated blood cultures thereby reducing patient risk of development of resistant bacterial strains.

The collaborative approach in the outpatient setting allowed nursing staff to have a significant impact on the risk to patients as well as the cost of unnecessary treatment. Utilization of an impatient technique of a skilled team approach in drawing blood cultures was translatable to the outpatient clinic setting.

## 143

**DECREASING THE MORBIDITY ASSOCIATED WITH CENTRAL VENOUS CATHETERS IN THE BONE MARROW/STEM CELL TRANSPLANT PATIENT**

**POPULATION.** Melissa Bennett, RN, BSN, OCN®, and Marilyn Bedell, MS, RN, OCN®, Norris Cotton Cancer Center/Dartmouth Hitchcock Medical Center, Lebanon, NH.

Central venous catheters (CVC) are essential technology used in the bone marrow/stem cell transplant (BMT) patient population. Decreasing CVC infections is a high priority in transplant care.

The purpose of this quality improvement project was to minimize CVC infections and related complications by improving the process of selection, placement and follow-up care for CVCs in the BMT patient population. The process began with the decision for the patient to undergo transplant and ended when the catheter was no longer medically necessary.

Three interventions were initiated. The first intervention was to standardize the ordering process for CVCs. The second intervention was to complete direct observations of both placement of CVCs and dressing change techniques. This was done to identify variation in practice based on Center for Disease Control and Prevention (CDC) guidelines. The third intervention was to implement the use of an antimicrobial dressing as well as ensure the ongoing use of CDC guidelines.

On January 1, 2005 new care standards were officially implemented. Currently, 32 CVCs in BMT patients have been tracked. The goal is to evaluate care of 52 BMT patients. To-date there have been no CVC infections identified. A retrospective review of 52 CVCs in BMT patients prior to January 1, 2005 showed a CVC associated blood stream infection (BSI) rate of 17.1 BSIs per 1000 catheter days.

This quality improvement project highlighted the importance of evaluating current practice assumptions, providing direct feedback about practice to clinicians, and achieving consensus about practice guidelines as a means to dramatically decrease infection rates.

## 144

**OUTCOMES OF PICC CARE IN IMMUNOCOMPROMISED PATIENTS.** Linda Person, RN, MSN, AOCN®, USC/Norris Cancer Hospital, Los Angeles, CA, and David Woodard, MSc, CIC, CA.

Peripherally inserted central catheters have been used in seriously ill patients for many years, however outcomes of these lines in oncology patients has appeared in few published studies. The most common rationale for using these lines is the simplicity of insertion into the central vasculature where a variety of caustic agents including chemotherapy, blood and nutrition can be delivered safely. The risk of line or bloodstream infection can be a life-threatening complication in an immunocompromised patient. Proper insertion and meticulous site care are nursing procedures when done correctly decreases the risk of infection.

This 12-month review looked at the outcomes of the catheters cared for by nursing staff in the inpatient and outpatient setting following a change in site care

Since the evolution of PICC use in this population our institution had used povidone iodine and 70% alcohol as the cleansing agent. Based on the recommendations of the Center for Disease Control (CDC) the cleansing agent was changed to chlorhexadine in August of 2003. Staff nurses were instructed in this change and all teaching materials were revised. The RNs responsible for insertion of the lines continued to follow-up with staff on this practice change.

Each patient who had a PICC inserted at the institution in 2004 by the RN team was entered into an internal data base. More than 90% of these patients were outpatients for the majority of time the line was used. These lines were monitored for any complications including suspected line infection. The rates of infection were similar to those in other reports of PICC lines used in all types of patients. This rate of infection was slightly less than what we saw with the previous cleansing agents. Collected data indicated an infection rate less than 4%.

The use of PICC lines in the immunocompromised patient is an effective tool to deliver needed treatments and therapies that can be managed with reduced risk of infection with the use of a simple one-step cleansing agent. These lines can be maintained safely by RNs over a prolonged period of time.

## 145

**NURSING CARE AND MANAGEMENT OF PATIENTS RECEIVING INTRA-PERITONEAL CHEMOTHERAPY.** Keith Marin, RN, BSN, Natasha Loving,

RN, BSN, and Paula Muehlbauer, RN, MSN, OCN®, National Institutes of Health, Bethesda, MD.

Intraperitoneal (IP) chemotherapy allows a high concentration of drug to be in direct contact with tumors and surrounding tissues. This technique is used in patients with peritoneal carcinomatosis who underwent surgical debulking and continuous hyperthermic peritoneal perfusion (CHPP). It is essential for oncology nurses to understand this treatment to help decrease risks of adverse events, increase chemotherapy exposure to peritoneal surfaces and increase patient comfort during and post-infusion.

Established standards do not exist for treating gastrointestinal peritoneal carcinomatosis. Clinical trials have evaluated surgical debulking, CHPP, and IP chemotherapy. Few studies focus on nursing care and management required for the patient undergoing post-operative IP chemotherapy. Potential risks are decreased healing and intra-abdominal infection. Potential benefits include preventing or delaying intra-abdominal tumor progression. The nurse assists the patient in reaching the best outcome while limiting discomfort.

The nurse instructs the patient regarding the procedure and potential complications. Peritoneal contents are emptied via a Tenckhoff catheter attached to a drainage bag allowing increased chemotherapy exposure to peritoneal surfaces. Chemotherapy is infused through an inline warmer which helps alleviate abdominal cramping. Other comfort measures include head-of-bed elevation and frequent position changes. Anxiolytics and pain medications are used before and during the procedure. The patient is monitored for discomfort, respiratory distress and vital sign changes throughout. Post infusion, patients are encouraged to walk to alleviate discomfort and increase chemotherapy contact with peritoneal surfaces.

Patients are evaluated at regular intervals for three years. Overall, treatment has been well tolerated and clinical outcomes look promising.

IP chemotherapy infusion is proving to be a viable treatment for individuals with peritoneal carcinomatosis. It is labor intensive often requiring 1:2 nurse to patient ratios. The nurse must understand this process and be cognizant of potential complications. This treatment has resulted in good responses at this institution and potentially will be an additional therapeutic option.

## 146

**EVIDENCE-BASED PRACTICE: CARING FOR BEREAVED FAMILY CAREGIVERS.** Lorraine Holtlander, RN, MN, PhD(c), College of Nursing, University of Saskatchewan, Saskatoon, Canada.

Cancer will be the world's leading cause of death sometime in the 21st century (Proctor, 1995). Very little is known about the experience of bereavement for family caregivers of cancer patients, or how best to support them during bereavement. Nurses providing palliative care services offer support to family members during a life-threatening illness and into the time of bereavement (World Health Organization, 2005).

In order to provide evidence-based nursing practice for bereaved family caregivers, this population's context of care was analyzed by reviewing health policies, synthesizing the relevant research literature, and examining the services offered to bereaved caregivers.

Oncology nurses have a significant role to play in supporting and guiding bereaved caregivers through grief and bereavement as caregivers recover from the difficulties of providing care and face their loss with the added fatigue of caregiving and possibly guilt and/or depression. The ultimate outcome of the health services system is well being or quality of life for the population being served. A model of effectiveness, efficiency, and equity (Aday, et al. 1993) was applied to examine the structure, process, and outcomes of care for bereaved family caregivers. Relevant health policies, the health care delivery system, and characteristics of the population at risk were examined.

The population of bereaved family caregivers has been mostly neglected in both the delivery of services and in research examining their needs. The themes that emerged from a review of research with bereaved palliative caregivers include their experiences of a lack of support, high rates of depression, risks of other illnesses, and even death during bereavement.

The health care system is struggling to meet the needs of bereaved family caregivers. Oncology nurses have a major role in providing nursing care, services, support, policy, and program evaluation for this population, based on evidence from research. By examining the context of care for

bereaved family caregivers, new insights are gained into the effectiveness, efficiency, and equity of health care services for this neglected population and the opportunities to improve health outcomes for caregivers going through bereavement.

## 147

**METHOD USED TO EFFECTIVELY ADDRESS NURSING CHALLENGES ENCOUNTERED DURING IMPLEMENTATION OF EVIDENCE-BASED ONCOLOGY PROTOCOLS.** Freda Barnes, RN, OCN®, BSN, James Kocis, RN, BSN, and Debra Peter, RN, BC, MSN, Lehigh Valley Hospital, Allentown, PA.

Historically, signs and symptoms of hospitalized patients with cancer were exclusively managed by physicians. Nurses often made multiple calls to physicians to manage sometimes common symptoms (i.e. laxatives for constipation, antidiarrheal agents for diarrhea, blood products for low counts, antiemetics for nausea/vomiting). To avoid symptom treatment delay and to address variations in physician practice, a nursing team searched the literature for best practice guidelines related to symptom management. Recognizing that current evidence supports the implementation of an evidence-based framework to consistently and effectively guide practice, nurses on our 26-bed oncology unit implemented evidence-based oncology protocols based on current National Guidelines. These protocols included a diarrhea protocol, nausea/vomiting protocol, constipation protocol and a blood product protocol.

To implement effective nurse-driven oncology symptom-management protocols and to evaluate the bedside nurse's perceptions of oncology protocol use and impact on the care provided to oncology patients.

Oncology Clinical Nurse Specialists and an Oncology Nurse Practitioner developed the process for staff/physician utilization of oncology protocols. On-line references were developed, staff education was provided, unit resources were made available to staff, and on-going rounding was implemented to heighten awareness and further educate staff to the newly implemented process. An eight question survey was developed that addresses frequency of use of the protocols, timeliness of symptom treatment, nurse's anxiety related to the process, advantages and disadvantages to using oncology protocols and the nurse's perception of the effectiveness of use of protocols.

Challenges related to implementation of oncology protocols were encountered and addressed, including staff reluctance to independently use protocols and their unfamiliarity with grading system for nausea and constipation. A survey was developed to better understand nursing staff perceptions of oncology protocol use.

Implementing successful methods to expedite prompt symptom management/treatment through the development and use of nurse-driven protocols are essential to oncology nursing practice. Listening to the bedside nurse who may be unsure of protocol use has the potential to uncover perceptions that must be addressed to effectively empower the oncology nurse to act in a timely manner and to optimize the care of the oncology patient.

## 148

**THE BEGINNING OF EVIDENCE BASED PRACTICE: SEARCHING THE LITERATURE.** Regina Smith, RN, BSN, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Our institution offers a bi-monthly nursing orientation, which introduces each nurse to a general overview of our nursing practice. This occurs during the first three weeks of nursing orientation. One of the many common threads included within each lecture is the support of evidence-based literature to support our practice. Many of the new staff state they are unfamiliar with evidence-based practice and do not know where to begin the process of identifying the available resources. The nursing instructor may assess the need for further education within each clinical area and evaluate the need for continuing education.

To improve the overall clinical practice within the institution by introducing the process of evidence based literature review during the orientation phase. Nurses will be given an opportunity to complete a literature search based on their individual assigned area and apply the new information to clinical practice.

Each nurse listens to a lecture and is introduced to evidence based practice. The nurse is then sent to the library to review the online resources and obtain any information relevant to their particular work area. Prior to completing the search, each nurse must narrow the available resources

down to a reasonable number, usually no more than ten recent searches. A sample template is supplied in order to document the data collected and is to be reviewed collectively by the nurse and the nursing instructor. Additional learning and training may be provided through continuing education, staff mentoring, and evidence based websites.

The education is ongoing and evaluated on a bi-annual basis in order to allow the new nurses an opportunity to become familiar with the current practices for their designated area. Each nurse will then provide written feedback regarding the evidence based educational process and how this made an impact in their practice. Overall outcomes will be evaluated on a yearly basis.

New oncology nurses are offered an opportunity to receive ongoing educational opportunities based on current practice and new research once they begin the clinical orientation. Additional learning is made available to provide a framework for improved evidence based research.

## 149

**NEW ANEMIA GUIDELINES AT OHIO STATE UNIVERSITY: ON-TIME INTERVENTION AND LONGER DOSING INTERVALS ASSOCIATED WITH IMPROVED OUTCOMES IN LYMPHOMA PATIENTS.** Melissa Nelson, RN, OCN®, and Maureen Buckner, CNP, Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH.

Anemia, a common complication in patients undergoing chemotherapy, can be treated using erythropoiesis-stimulating proteins. Chemotherapy is frequently administered on an every-3-week (Q3W) schedule. Recent evidence suggests that darbepoetin alfa (Aranesp®) can also be administered Q3W. Lymphoma patients, in particular, may benefit greatly from synchronizing cancer treatment and anemia intervention because these patients generally receive 21-day R-CHOP therapy. Here we describe our experience in updating and implementing guidelines for the treatment of chemotherapy-induced anemia (CIA). Oncology nurses were ideally positioned to implement new CIA clinical practice guidelines, develop educational tools, and evaluate clinical outcomes.

To evaluate clinically relevant outcomes in lymphoma patients following the implementation of new CIA guidelines, as measured by transfusion requirements, hemoglobin profiles, patient-reported fatigue, and number of visits.

A multidisciplinary team at the Ohio State University Medical Center developed new CIA guidelines based on a review of the literature and the National Comprehensive Cancer Network (NCCN) guidelines. Our new guidelines specified initiating anemia intervention when a patient's hemoglobin concentration was below 11 g/dL (implemented December 2004) and using darbepoetin alfa either every 2 weeks (Q2W) or Q3W (implemented March 2005). Darbepoetin alfa was administered subcutaneously as a fixed dose (200 mcg Q2W or 300 mcg Q3W), and titrated to maintain hemoglobin levels within the NCCN target range of 11 to 12 g/dL.

This is a retrospective chart review of 40 lymphoma patients who received darbepoetin alfa therapy for CIA before and after the implementation of our new guidelines to evaluate the clinical impact of these changes. Results pertaining to transfusions, hemoglobin, fatigue, and the number of visits will be presented.

The new CIA guidelines, which comprised darbepoetin alfa therapy administered on-time (i.e., initiated at higher hemoglobin levels) and using longer dosing intervals than standard weekly dosing, may lead to improved patient outcomes. The Q3W schedule allowed for synchronization of therapies for lymphoma patients and minimized the total number of injections. Nurses played an essential role in the implementation and evaluation of these guidelines, thereby streamlining and optimizing patient care. This strategy is adaptable and can be used by nurses in other clinics.

## 150

**DESIGNING AND IMPLEMENTING CLINICAL PRACTICE GUIDELINES FOR CIA MANAGEMENT TAILORED TO THE INDIVIDUAL THERAPEUTIC NEEDS OF THE PATIENT.** Ilene Schulman, RN, MSN, ANPc, and Margaret Lundquist, MPH, MSN, ANPc, Mt. Sinai School of Medicine, New York, NY.

Cancer patients often develop chemotherapy-induced anemia (CIA), which can be effectively treated with the erythropoiesis-stimulating protein darbepoetin alfa (Aranesp®). Darbepoetin alfa (DA) can be administered weekly, every two weeks (Q2W), or every three weeks (Q3W) on the

same day as chemotherapy. Guidelines that allow for the administration of DA on Q2W and Q3W schedules would allow clinicians to synchronize anemia management with either 14-day or 21-day chemotherapy treatments, respectively. Oncology nurses can play a vital role in developing and implementing guidelines that coordinate interventions and reduce clinic visits.

To optimize DA therapy for oncology patients by designing, implementing, and evaluating guidelines for DA administration on a Q2W or Q3W schedule.

Our guidelines for DA administration in patients with CIA were designed based on NCCN recommendations and on DA studies in the current literature. Therefore, our new guidelines recommend initiating DA therapy in patients with hemoglobin (Hb) <11g/dL. Patients on 14-day chemotherapy regimens should receive DA 200mcg Q2W, and patients on 21-day regimens should receive DA 300mcg Q3W. Patients with individualized chemotherapy schedules should receive DA on a schedule that synchronizes with the patient's treatment/assessment visits. If a >1g/dL Hb increase is not seen after 6 weeks, DA should be escalated to 300mcg (Q2W schedule) or 500mcg (Q3W schedule). Achieving a target Hb of 11-12g/dL is the treatment goal.

These DA guidelines will be implemented at our clinic in late 2005. A prospective study (20 patients in a DA Q2W arm; 20 patients in a DA Q3W arm) is planned to examine the impact of these guidelines on anemia management. Endpoints will include the percentage of patients who achieve target Hb levels, receive transfusions, and report a change in quality of life utilizing a novel fatigue tool. Results will be submitted in an abstract for ONS 2007.

Implementing DA guidelines at our clinic is expected to optimize anemia management and increase patient convenience/compliance due to the synchronization of DA therapy with other interventions. Oncology nurses can develop and oversee the implementation of guidelines at their clinic to standardize care, synchronize therapeutic interventions, and reduce clinic visits.

## 151

**A RISKY BUSINESS: IMPLEMENTING A PLATINUM-BASED DESENSITIZATION PROTOCOL IN THE OUTPATIENT SETTING.** Robin Green, RN, BSN, MSN, OCN®, New York University (NYU) Hospitals Center, New York, NY; Andrea Downey, RN, MA, NYU Cancer Institute, New York, NY; Kathleen McCaffrey, RN, MSN, and Eileen Fusco, RN, NP, NYU Hospitals Center, New York, NY; and Franco Muggia, MD, NYU Cancer Institute, New York, NY.

Platinum-based therapy represents the cornerstone of treatment for a variety of malignancies. Due to improved survival rates, patients are remaining on chemotherapy longer or receiving more than one platinum-based drug in the course of their treatment. All platinum-based compounds are associated with hypersensitivity reactions (HSR). Continued treatment after a HSR is not recommended by the pharmaceutical companies. However, if a patient has either exhausted other treatment modalities or is having a favorable response to platinum-based therapy, desensitization protocols have been implemented. These protocols often necessitate inpatient admissions and involve heavy allocation of hospital resources.

Implementation of a platinum-based desensitization regimen applicable to the outpatient setting

At this NCI-designated outpatient center we routinely desensitize patients who have experienced a HSR. All patients followed a medication schedule using steroids, H<sup>1</sup> and H<sup>2</sup> receptor antagonists and Indomethacin. The pharmacokinetics of the protocol was based on the linear relationship between dose concentration and infusion time; an increase in the concentration of the drug corresponded with an increase in the rate of infusion. Infusion times ranged between 5 to 8 hours. The patients were monitored for symptoms of HSR; mild infusion-related symptoms were managed with additional medications and a decrease in infusion rate.

We were able to successfully treat all patients. The protocol was modified to account for dosage differences in the agents. Carboplatin was administered at a MG/ML/MIN rate, with programmed rate increases. Cisplatin and Oxaliplatin were first divided into serial aliquots; .01mg, .1mg, and 1mg of total dose. If tolerated, the remaining dosage was administered at a fixed rate over 4 hours.

Carboplatin is widely used in recurrent gynecologic cancers; oncology nurses are now seeing an increasing incidence of HSR's. It is critical that the nursing staff has the resources and training to ensure the safe



management of these patients. The success of this protocol lends support to the feasibility of accomplishing the initial desensitization to platinum-based HSR's in the outpatient setting. Some unresolved issues are the safety of intraperitoneal administration in a patient who experiences an HSR, and the extent of cross-sensitization between platinum.

## 152

**ONCOLOGY NURSE SURVEY OF 5-HT<sub>3</sub> RECEPTOR ANTAGONISTS USE IN CLINICAL PRACTICE.** Barbara Baum, RN, BSN, OCN®, Creative Cancer Concepts, Inc., Rockwall, TX; Jason Rothaermel, RN, BSN, OCN®, Cleveland Clinic Foundation, Cleveland, OH; Jill Shear, RN, BSN, and Beth Ramer, RN, MSN, MGI Pharma, Inc., Bloomington, MN; and Elaine DeMeyer, RN, MSN, AOCN®, Creative Cancer Concepts, Inc., Rockwall, TX.

Despite established antiemetic guidelines, patients experiencing chemotherapy induced nausea and vomiting (CINV) are managed inconsistently. The incidence of CINV has been reported in as much as 80% of individuals receiving chemotherapy. CINV has a negative effect on all aspects of the patient's life, including the potential for electrolyte imbalances, malnutrition, dehydration, dose reductions and dose delays. Over the past decade several new antiemetic agents have emerged along with published guidelines and a growing body of CINV research. Consequently, it has become necessary to determine the level of compliance to these guidelines in practice. Oncology nurses have a unique role in promoting evidence based practice and influencing antiemetic prescribing patterns.

The purpose of this abstract is to describe the practice patterns and awareness of 5-HT<sub>3</sub> antiemetics for both acute and delayed CINV.

During the 2005 ONS Congress, 2068 nurses participated in a survey to assess their awareness of 5-HT<sub>3</sub> antagonists and practice patterns. The majority surveyed (42.8%) worked in-patient, 30% outpatient, 21.5% in a private office setting, with 5.8% in academia.

The survey indicated only 23.1% regularly use a second generation 5-HT<sub>3</sub> antagonist such as palonosetron as front line antiemetic therapy. Almost two-thirds, (60.7%) had limited or no experience with palonosetron. Of those experienced with palonosetron, 47.1% stated no additional 5-HT<sub>3</sub> antagonists are used. When asked about the use of first generation 5-HT<sub>3</sub> antagonists (dolasetron, granisetron, ondansetron) for primary therapy, 77.1 % regularly use additional 5-HT<sub>3</sub> antagonists for follow-up therapy. Yet according to recently published Community Clinical Oncology Program (CCOP) data, short-acting 5-HT<sub>3</sub> antagonists were no better than prochlorperazine for follow-up therapy. Additionally, 68.8% incorporate dexamethasone in follow-up therapy.

There is a great need for increased familiarity with palonosetron, antiemetic guidelines and CINV research. Current guidelines recommend a 5-HT<sub>3</sub> antagonist plus dexamethasone as frontline therapy, with dexamethasone for follow-up, as the preferred strategy for prevention of CINV. Palonosetron has demonstrated through numerous clinical trials, to have the highest level of efficacy amongst the 5-HT<sub>3</sub> antagonists available. This survey emphasizes the need for nursing education and understanding of available antiemetic medications for optimal patient outcomes.

## 153

**MANAGING CUTANEOUS SIDE EFFECTS ASSOCIATED WITH ERLOTINIB IN HEAD AND NECK CANCER (HNC)/NON-SMALL CELL LUNG CANCER (NSCLC) PATIENTS: NURSING ROLE.** Karen Oishi, ANP-C, GNP-C, APRN, MSN, OCN®, and Edward Kim, MD, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Erlotinib (Tarceva) is an oral epidermal growth factor receptor (EGFR) targeted therapy. It is approved for therapy in NSCLC patients after failure of at least one prior chemotherapy regimen. It has also been studied in other tumors including HNC. Erlotinib has fewer side effects compared to standard chemotherapy. Cutaneous toxicities with erlotinib have been observed in approximately seventy percent of patients with most cases typically mild-to-moderate. The most common manifestations are rash, pruritus, and dryness. Oncology nurses encounter these patients often in clinics. As rash may be a marker of clinical benefit and response, continuing therapy through toxicities is important.

We seek to describe effective interventions for management of cutaneous toxicities associated with erlotinib. Nurses are an important component of the treating team, and need to understand how to assess and manage these toxicities to avoid unnecessary treatment discontinuation. Currently, there are no standard treatment strategies for EGFR associated rashes.

We have developed a treatment algorithm for EGFR-related cutaneous toxicities and applied it prospectively to patients treated with erlotinib in a HNC clinical trial as well as NSCLC patients seen in clinic. Fifty-five patients have been evaluated thus far.

A phase II HNC trial has enrolled 32 patients and 28 are evaluable for toxicity. Nineteen patients developed grade 1 rash, 8 patients grade 2, 1 patient grade 3, and no grade 4. Response to rash intervention (i.e. downgrading the rash) included 19/19 complete responses for grade 1, 6/8 partial responses for grade 2 and 1/1 partial response for grade 3 were noted. Three patients experienced dose delay and/or dose modification. In addition, 33 NSCLC patients are also evaluable for toxicity. Twenty five patients developed grade 1 rash, 4 patients grade 2, 4 patients grade 3, and none grade 4. Response to rash intervention included 25/25 complete responses for grade 1, 4/4 complete/partial responses for grade 2 and 3. Four patients experienced dose delays and/or dose modifications.

Successful management of cutaneous toxicities associated with erlotinib is achievable using the proposed algorithm. Furthermore, this will assist the nurses to practice evidence-based nursing care for patients receiving erlotinib.

## 154

**TREATMENT RESPONSE WORKSHEET (TRW), A TOOL FOR NURSES IN MANAGING AND EVALUATING PATIENTS WITH MYELODYSPLASTIC SYNDROME (MDS) RECEIVING AZACITIDINE TREATMENT.** Rosalie Odchimar-Reissig, RN, MSN, OCN®, CCRC, Erin Demakos, RN, CCRC, Lewis Silverman, MD, and Barbara Rawlerson, RN, OCN®, Mount Sinai Hospital, New York, NY.

The nurse's level of knowledge and experience in caring for patients with myelodysplastic syndrome (MDS) has an impact on the quality of patient outcomes. Nurses caring for MDS patients on azacitidine treatment are bombarded with a plethora of clinical data from different sources over a short period of time. Nurses need a tool to help organize clinical data thus allowing them to effectively perform their critical role in managing and evaluating patients receiving azacitidine treatment.

The Treatment Response Worksheet (TRW) was developed by the MDS Team at this institution to help manage patient's clinical data. The information on the TRW is a snapshot-in-time of a patient's disease status and clinical picture while receiving azacitidine treatment. Nurses use this worksheet, a grid with rows and columns, by entering clinical data for each treatment cycle along each row across several columns. Using this worksheet, nurses can effectively assess, intervene, and evaluate patient's response to treatment.

Baseline data (i.e., date of diagnosis, FAB classification, IPSS, Cytogenetics, blood counts, blasts percentage in the blood/bone marrow, target value to determine each cell lineage response, and quality of life data including episodes of infection and blood transfusion) are entered before the patient starts azacitidine treatment. Additional clinical data (i.e., drug dose and start date, nadir/recovered/peak blood counts, length of a cycle, and history of blood transfusion and antibiotic use) are entered and tracked during each treatment cycle.

By comparing baseline with treatment data, nurses can anticipate and facilitate plans for the next treatment cycle (start on schedule versus delay treatment or give the same/reduce/increase dose) and determine if a patient can continue with azacitidine treatment after four cycles depending on the overall response (Hematologic Improvement, Partial Response, Complete Response, Improvement in Quality of Life). As a tool, the TRW guides the nurse to efficiently manage patient's disease and symptoms, and evaluate response to azacitidine treatment.

The TRW can help nurses become informed on the progress of a patient's treatment history thus empowering them to become effective clinicians, patient advocates, educators, and researchers. This tool has general application with other drugs for MDS therapy with appropriate modification.

## 155

**BORTEZOMIB (V) IN COMBINATION WITH DOXIL (D) AND THALIDOMIDE (T) YIELD HIGH RESPONSE RATE IN PATIENTS WITH REFRACTORY MULTIPLE MYELOMA.** Kena Miller, FNP, and Laurie Musiali, RN, BSN, Roswell Park Cancer Institute, Buffalo, NY.

Multiple Myeloma (MM) is an incurable hematologic cancer. all patients (pts) eventually relapse and die of progressive disease. Development

of newer therapies and combination regimens are imperative for management of patients with relapsed/refractory disease. While V is approved for MM the response rates are low (27%) with only 11% achieving a complete response (CR). In a phase II clinical trial we investigated the combination of V with D and T (VDT) and noted high over response rates (ORR).

In this abstract we report on the results of this novel combination that was developed in collaboration with the principal investigator and the clinical oncology nurse practitioner (C-ONP). Side effect experience of the C-ONP with B using 1,4, 8,11 schedule resulted in development of this unique dosing schedule (V on days 1,4, 15 and 18) that resulted in not only improved tolerability but also higher response rates when combined with D and T.

This unique collaboration resulted in development of new treatment regimen that is not only patient friendly but also yielded high response rates in heavily pretreated patients.

VDT regimen is given as:

V= 1.3mg/m<sup>2</sup> days 1,4,15,18

D=20mg/m<sup>2</sup> days 1,15

T=100-200mg daily

each cycle is q28, days.

This schedule improved tolerability and resulted in higher ORR (62.55) and CR (25%) rates in 21 MM patients with relapsed and refractory disease.

Knowledge of the side effect profile of these drugs reported by the C-ONP directly helped develop this unique combination treatment with patient friendly schedule and without compromise of efficacy.

VDT has high ORR and CR rates and is an effect salvage regimen now used at our cancer center. The role of C-ONP in development of this regimen is unique and highlights the benefit of close collaboration of the treating physician with the clinical nurse practitioner and the clinical research nurses.

## 156

**IMPROVING CLINICAL AND QUALITY-OF-LIFE OUTCOMES: RESULTS OF A PHASE III TRIAL OF DECITABINE (DAC) VS SUPPORTIVE CARE (SC) IN PATIENTS WITH MYELODYSPLASTIC SYNDROMES (MDS).** Jan Davis, RN, BS, University of Texas M.D. Anderson Cancer Center, Houston, TX; Hussein Saba, MD, PhD, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL; and Carlos De Castro, MD, Duke University Medical Center, Durham, NC.

MDS is a blood disorder that results in ineffective hematopoiesis and peripheral blood cytopenias. Standard therapy includes supportive care (SC) to manage symptoms related to anemia, thrombocytopenia, and/or neutropenia. Hypomethylating agents, including azacitidine (Vidaza®) and decitabine (Dacogen™), are also emerging as treatment options for MDS.

This presentation will help educate nurses who manage MDS about DAC, a hypomethylating agent that impacts clinical and quality-of-life (QOL) outcomes.

A phase III, randomized, open-label trial was conducted comparing DAC vs SC in MDS patients with intermediate and high-risk disease. Co-primary endpoints were Response Rate (CR+PR) and Time to Acute Myeloid Leukemia (AML) or Death. Secondary endpoints included transfusion requirements and QOL. QOL was measured using the EORTC scale, which incorporates 9 multi-item scales: 5 functional scales (physical, role, cognitive, emotional, social); 3 symptom scales (fatigue, pain, nausea & vomiting); and global health and QOL scales.

170 patients received either DAC (3-hr infusion 15 mg/m<sup>2</sup>/hr q8h for 3 days q6wk) plus SC (n=89) or SC alone (n=81). Baseline characteristics were comparable. The response rate according to International Working Group MDS criteria was 17% for DAC (9% CR, 8% PR) vs 0% for SC (p<0.001). DAC patients had a median Time to AML or Death that was numerically greater than SC patients (12.1 vs 7.8 months). Additionally, 13% of DAC-treated patients had hematologic improvement vs 7% of SC patients. Responses were durable, lasting a median of 10 months. The median number of cycles was 3, although additional cycles may be warranted. The percentage of patients not requiring red blood cell transfusions increased in the DAC group and did not change in the SC group. A lower percentage of patients received erythropoietic growth factors in the DAC arm vs SC arm. Patients receiving DAC showed significant improvement in global health status, physical functioning, fatigue, and

dyspnea. DAC was well tolerated; the most common adverse events were myelosuppression and infections.

DAC is a promising therapy for MDS, demonstrating improved clinical and QOL outcomes and a manageable toxicity profile. In a disease where few treatments exist, DAC represents an important option for patients of oncology nurses managing MDS.

## 157

**ASSESSMENT AND MANAGEMENT OF DERMATOLOGIC REACTIONS ASSOCIATED WITH ERLOTINIB (TARCEVA).** Ro Henderson, RN, BSN, MSN, AOCNP, University of Kansas Hospital, Kansas City, KS.

Erlotinib (Tarceva) is an epidermal growth factor receptor/tyrosine kinase inhibitor recommended for second line treatment of patients with metastatic non-small cell carcinoma of the lung and in combination with gemcitabine as first line treatment for locally advanced, unresectable, or metastatic pancreatic carcinoma. The most frequently experienced side effects include rash and diarrhea. It is important that oncology nurses and nurse practitioners perform adequate skin assessments and have information to prescribe treatment interventions for skin reactions.

The purpose of this presentation is to educate oncology nurses and nurse practitioners regarding the management of potential dermatologic side effects of Tarceva including skin assessment and treatment interventions.

A tool will be presented that allows for grading of skin rashes and includes an algorithm for treatment of skin reactions as practiced at this academic healthcare institution. Information regarding the dose modification exchange program will also be presented.

Oncology nurses and nurse practitioners will have an opportunity to review this assessment tool and treatment intervention that is potentially applicable to their own practice setting.

Tarceva is an exciting new treatment option for patients with metastatic non-small cell lung carcinoma and pancreatic carcinoma. In our experience, the drug has been generally well tolerated, although some patients have developed impressive skin rash. It is imperative that oncology nurses and nurse practitioners have information to assess and treat potential dermatologic toxicities.

## 158

**PROPHYLACTIC ANTICOAGULATION FOR IMPROVED CARE OF THE MEDICAL ONCOLOGY PATIENT.** Wendi Stone, BSN, MSN, and Rachel Bennett, RN, Memorial Sloan-Kettering Cancer Center, New York, NY.

Deep vein thromboses (DVT) are common to hospitalized patients within both the medical and surgical populations. Oncology patients are at a higher risk of incidence because cancer is considered a hypercoagulable state. DVT is known to be one of the most frequent complications and causes of death in the cancer patient. Risk factors for DVT include age >60, immobility, surgery, chemotherapy, bone fractures and medications such as oral contraceptives. Incidence of DVT in medical patients is 10-40%. At this NCI designated comprehensive cancer center, a performance improvement project was initiated to implement DVT prophylaxis in the medical patient. It was noted that pulmonary emboli and shortness of breath are common causes of readmission in our institution, and it is commonly known that DVTs produce increased morbidity and mortality rates and increase cost of treatment. DVT is known to be one of the most frequent complications and causes of death in the cancer patient.

At our institution a program was implemented for DVT prophylaxis, to improve compliance of the standard and to consequently reduce the incidence of clot related morbidity and mortality. Evidence based agents were selected to use for DVT prophylaxis. The standard of Low Molecular Weight Heparin (LMWH) used institution wide is based on this improvement project. LMWH has been proven to be equivalent to unfractionated heparin in randomized trials. It has been associated with less bleeding and with less Heparin-induced thrombocytopenia.

An admission order set was created that includes a standard therapeutic dose of Tinzaparin Sodium and a dose for noted current DVT treatment. Tinzaparin Sodium is given by injection subcutaneously once a day to either prevent or treat DVT in high-risk patients. A staff education initiative was implemented to encourage increased DVT monitoring and documentation of compliance.

This performance improvement project continues at our institution. Nurses are able to identify the high-risk patients and assure that they are

written for DVT prophylaxis. The institution continues to monitor DVT and prophylaxis rates to document this compliance.

DVT is prevalent in the oncology population. As nurses caring for these patients, improving the prophylactic anticoagulation can only improve patient outcomes and in turn improve overall patient care, decrease hospital readmission and improve quality of life.

## 159

COMPARISON OF DRONABINOL AND MEDICAL MARIJUANA. Ellen DeBondt, RN, BSN, OCN®, Seattle Cancer Care Alliance, Seattle, WA.

The Institute of Medicine's 1999 report on medical marijuana stated, "the accumulated data indicate a potential therapeutic value for cannabinoid drugs, particularly for symptoms such as pain relief, control of nausea and vomiting, and appetite stimulation." These symptoms are very prevalent in the oncology patient, and many oncology patients are using Dronabinol (Marinol) and/or Medical Marijuana for symptom relief.

The purpose is to provide a pharmacological and evidence based comparison of Dronabinol and Marijuana.

The comparison will include indication, routes of administration, cost, onset and duration of action, side effects and safety concerns. Scientists have identified approximately 66 chemical compounds in Marijuana known as cannabinoids. The active ingredient in Marinol, synthetic delta-9-tetrahydrocannabinol, is an analogue of one such compound, THC. Dronabinol contains only one of the 66 cannabinoids present in Marijuana. In the past 15 years scientist have identified a biological system, the endocannabinoid system and are working to understand its role in pain, normal brain function, the nervous system, and effects on appetite. Marijuana is most commonly smoked but can be used as a vaporizer, a tincture, or orally when prepared in food.

Oncology nurses are experts on symptom control and it is important that we understand the differences of Dronabinol and Medical Marijuana. Following review of this educational poster Nurses will be able to provide a vital nursing intervention, patient education.

As Rose Mary Carroll-Johnson wrote in her editorial 'Highs and Lows' (*Oncology Nursing Forum*, July 2005), "Some serious questions remain.... leaving us in a difficult situation when patients or family members ask for advice. The best we can do is offer the facts as we know them, avoid condoning illegal behavior, and encourage a full, responsible, impartial, and scientific approach to rational decision making." There is much research, education, and discussion that needs to be done and it is important that we as Oncology Nurses who are experts in symptom management are involved in this.

## 160

HISTORICAL AND REGULATORY ISSUES OF MEDICAL MARIJUANA. Ellen DeBondt, RN, BSN, OCN®, Seattle Cancer Care Alliance, Seattle, WA.

Marijuana has been used medically for thousands of years and in the United States for over 150 years up until the 1937 Tax law and subsequent passing in 1970 on the Controlled Substance Act. Currently 11 states have laws supporting medical marijuana, yet marijuana is currently a schedule I substance. Given the discrepancy between the federal and state law, this has created confusion and controversy for healthcare providers and patients. The American Nurses Association is among one of the medical organizations supporting patients' rights to legally and safely access marijuana/cannabis for symptom management.

The purpose of this is to provide education to oncology nurses on the relevant history of medical marijuana and the current regulatory issues governing its use.

In this poster I will provide an overview on the federal law (Controlled Substance Act) with regard to marijuana, summarize the Washington State Medical Marijuana Act, and the current policy at the Seattle Cancer Care Alliance. At the Seattle Cancer Care Alliance, any patient who meets the criteria for use of medical marijuana, reviews the benefits, risks, safety concerns, side effects and potential hazards with his or her physician. This is documented on one of two forms: a treatment consent form and an authorization for use form that patients keep in their possession to provide medical documentation and a basis for the legal defense against prosecution. Patients cannot obtain a routine prescription for marijuana, because it is a schedule I substance and therefore illegal under federal law to prescribe as medicine.

Oncology Nurses functioning as care coordinators, patient advocates and patient educators need to be aware of current regulatory issues both on the federal and state level.

As healthcare providers we need to separate the issue of recreational use of marijuana from medical use, these are 2 separate issues. Historically marijuana's medical use has been well-documented, current research has shown benefit, and a 1999 report by the Institute of Medicine stated "the accumulated data indicate a potential therapeutic value for cannabinoid drugs, particularly for symptoms such as pain relief, control of nausea and vomiting, and appetite stimulation."

## 161

PHARMACOLOGIC MANAGEMENT OF PAIN IN THE ADULT ONCOLOGY PATIENT. Jane Caplinger, RN, OCN®, and Daniel Bestul, PharmD, William Beaumont Hospital, Royal Oak, MI.

Pain management of the adult oncology patient remains a primary focus of oncology nursing practice. Oncology nurses play a vital role in pain assessment and management. Previous hospital guidelines for pharmacologic management of pain in the adult oncology patients were outdated.

The purpose of this project was to update the resource book for the pharmacologic management of acute and chronic pain in the adult oncology patient. The advent of new drugs, the development of new continuous IV infusion and patient controlled analgesia protocols, and the addition of guidelines for management of opioid adverse effects necessitated this revision.

An interdisciplinary team of nurses, physicians, and pharmacists was formed. A literature review was done to identify best practices. Oncology pain management case studies were analyzed to identify strengths and weaknesses in our current pain management regimens. The resource book was revised based on our findings.

The results of patient pain management satisfaction surveys and pain audits will be reviewed and interpreted. Oncology pain management case studies will be continued.

New guidelines for the pharmacologic management of pain for oncology patients will empower the nurse by providing the necessary information for prompt, safe and effective pain management. This will enhance the quality of patient care and improve patient satisfaction. This resource book will be adapted for use throughout the hospital for all adult patients with acute and chronic pain.

## 162

THE RACE FOR A NURSE'S DOCUMENTATION ON PAIN MANAGEMENT IN THE NURSING HOME CARE UNIT: AN ACTION PLAN FOR SUCCESS. Hazel Jackson, RN, MN, Atlanta VAMC, Decatur, GA.

Pain management and proper documentation continues to be a significant, important, and relevant issue for oncology nursing, as well as, nurses of all disciplines.

Research continues to indicate that adequate pain management and documentations continues to be a challenge with 87% of cancer patients experiencing pain in their last six months of life and 72% of non-cancer patients experiencing pain in their last six month of life. Many of these patients will die in Nursing Home.

Pain documentation monitors were developed by the Pain Management Committee to track pain assessment and documentation for each specialized area at the Atlanta VAMC. A review of the Nursing Home Care Units (NHCU) monthly pain monitors for three months identified the need for an action plan to improve nursing documentation. The action plan's goal for the NHCU was to have pain monitor scores greater than 75% in all indicators in six months, and 90-100% compliance in twelve months. The three-month review also indicated the area of focus and identified specific issue that needed to be addressed. Objectives for the action plan were to educate the staff to identify components of a complete pain focus note and verbalize the impact of incomplete notes on the NHCU's pain monitor scores. An innovative action plan, "The Race for Nurses Documentation on Pain Management", was implemented.

An innovative action plan, "The Race for Nurses Documentation on Pain Management", was implemented. Staff was provided with examples of pain focus notes reviewed for completing the monthly nursing documentation pain Monitor and laminated reference card to assist them in identifying the components of a comprehensive pain focus note.



The "race" began in July 2004. The NHCU's pain monitor scores have improved significantly as nurses strive to cross the finish line.

The poster will outline the process for the development, planning and implementation of an action plan to improve pain documentation that can be used by oncology nurses in outpatient clinics and inpatient units. It will also reveal the outcomes of the Race for A+ nursing documentation of Pain Management in the NHCU.

## 163

**USING ELNEC TO ENHANCE NURSES' COMFORT LEVELS IN PROVIDING QUALITY END-OF-LIFE CARE.** Christina Shane, RN, BSN, OCN®, Catherine Lawrence, RN, BA, CHPN, Diana Karius, RN, MS, AOCN®, and Dawn M. Gubanc, RN, MSN, CNA, BC, Cleveland Clinic Foundation, Cleveland, OH.

As the acuity and complexity of the oncology and palliative medicine patients admitted to the hospital continues to rise, it is imperative that as oncology leaders, we provide education to our front line staff on end-of-life care.

This poster presentation will detail the impact of an educational offering utilizing the ELNEC curriculum within a 975-bed academic, tertiary care medical center.

This pilot educational offering was conducted during an eight-hour day and utilized the ELNEC curriculum. CEUs were awarded for this offering. Registered Nurses participated from the following clinical areas: Adult Bone Marrow Transplant, Adult Heme/Onc, Palliative Medicine and an Intensive Care Unit.

A Likert scale measuring different dimensions encompassing the care of patients and families at the end-of-life was used to perform a pre assessment of the nursing participants and a post assessment of the nursing participants. The post assessment demonstrated a 75% increase in comfort with managing end-of-life care.

As demonstrated by the increased post assessment scores, education does impact comfort levels in nurses who are routinely challenged with providing end-of-life care. As end-of-life care occurs not only on oncology and palliative medicine floors, future plans include repeating this offering within the cancer center and expanding it to include other clinical areas within the hospital.

## 164

**ADVANCE DIRECTIVES: THE PATIENTS' ORDERS ON THE NECESSITIES OF LIFE AND DEATH.** Barbara Biedrzycki, RN, MSN, AOCN®, CRNP, Johns Hopkins, Baltimore, MD.

The Patient Self Determination Act of 1990 brought the novel concept of planning for end of life care to the nation's attention. The federal law mandates that health care facilities provide patients with written information regarding their rights to make health care decisions and document their advanced directive status. While the quality compliance of marked check boxes have been adequate, oncology nurses know that there is a national knowledge deficit regarding advance directives. Furthermore, oncology nurses are expected to be trusted resources to assist with decision making for end of life care.

Using adult learning principles, oncology nurses will be updated on advance directive news, including living will registries. This project will provide the basics regarding accessing forms and state-specific information about living wills and the durable power of attorney for health care, to more advanced ethical issues. The old adage, "See one, do one, and teach one" serves as the "conceptual model." The purposes of this activity are: 1) to update oncology nurses about advance directives, 2) to assess oncology nurses' advance directives status, and 3) to determine if resources and knowledge impact advance directive usage.

Oncology nurses will receive resources to implement their own advance directives, and to teach others. Oncology nurses will be encouraged to try their new skills on family members and friends first. This friends and family exercise will build confidence and reinforce knowledge before working with patients who may be facing end of life decisions now.

The project goals will be evaluated through a novel approach. Participants will be asked to mark a stroke directly on a portion of the poster to indicate if they have advance directives and if access to resources and knowledge impact advance directives usage.

Oncology nurses are the prime health care providers to set exemplary practice on advance directives. Not only will they be equipped with latest

information and resources, but also will have the real experience of completing their own advance directives. By gaining more knowledge about the federal and state laws governing advance directives oncology nurses will become leaders in this nursing-sensitive area of care.

## 165

**COMING FULL CIRCLE IN ONCOLOGY HOSPICE PALLIATIVE CARE TELE-LEARNING: A CASE STUDY APPROACH.** Margaret Vlahadamis, RN, BSCN, CON(C), CHPCN, and Michelle Hoeber, CST, Alberta Cancer Board, Cross Cancer Institute, Edmonton, Canada; Marie-Josée Paquin, RN, MSc, Alberta Cancer Board, Calgary, Canada; and Marilynne Hebert, PhD, University of Calgary, Calgary, Canada.

Palliative Care Resource Nurses in rural Alberta identified a need to link with palliative care colleagues for discussing clinical situations. When becoming aware of this need, the Alberta Cancer Board Hospice Palliative Care Network offered to facilitate linkages.

Hospice Palliative Care Telelearning was developed from a need expressed from colleagues in rural areas of Alberta. They identified a need for a program of learning that would allow them to stay in their home community and yet obtain a higher level of hospice palliative care knowledge.

Interdisciplinary teams from two Regional Health Authorities (RHA) and two Tertiary Cancer Sites joined together to facilitate oncology hospice palliative care telelearning in Alberta within a collaborative framework. Each team was responsible to write case studies using a clinical template that reflects the Canadian Hospice Palliative Care Association domains of issues associated with illness and bereavement. For eighteen biweekly sessions, one team presented their case study to the group and one team was responsible for responding, however interactive discussion is encouraged.

Colleagues from the University of Calgary provided guidance and expertise to conduct the literature search and project evaluation. The team has set these objectives:

- 1) Develop a telelearning framework for oncology hospice palliative care in Alberta.
- 2) Foster professional development of hospice palliative health care professionals through multi-site videoconferencing.
- 3) Develop a case study/content delivery format that is effective for telelearning via videoconference.
- 4) Enhance knowledge sharing among project partners.
- 5) Investigate potential telementoring opportunities and processes.
- 6) Develop a process to capture and re-use the learning opportunities, e.g. record sessions; printed booklet of case studies.

Early outcomes suggest this telelearning method is effective and productive for sharing assessment tools, resources and knowledge around hospice palliative care for both rural and urban areas

## 166

**LONG-TERM STRATEGIES FOR IMPLEMENTING PALLIATIVE CARE PROGRAMS IN CANCER CENTERS.** Jo Hanson, RN, MSN, OCN®, and Marcia Grant, RN, DNSc, City of Hope National Medical Center, Duarte, CA.

Palliative care programs (PCP) are becoming more common in our hospitals with a 62% growth in past three years, (Morrison et al, 2005). Institutional, collegial, and educational characteristics may impact program development. 2-person teams composed of: RN, MD, SW, and others, attended a three-day cancer end-of-life course.

This abstract will present results and analysis from phone interviews with Disseminating End-of-Life Education to Cancer Centers (DELEtCC) teams 18 months-post course.

Individual institutional goals, developed during the course, were discussed during the follow-up phone interviews. Using content analysis, support and barriers to goal implementation were examined for 140 cancer institutions. Support characteristics\* include: Additional staffing (I,C); administrator membership on PCP committee (I,C); palliative care in hospital orientation (I,E); institutional support for cancer education (I,E); advance practice RNs (E,C); mandate to have PCP (I); MD palliative care champion (C); QOL in mission statement (I). Barrier characteristics\* include: Other priorities (I,E,C); competing responsibilities (E,C,I); non-revenue generating (I); no funding (I); changes in staff (C,I); lack of qualified staff (E,C); lack of staff education (E); PCP skeptics (C,E). (I=institutional; C=collegial; E=educational)

Long-term follow-up of educational course can reveal institutional, collegial and educational characteristics that impact development of PCP.

These results provide direction for future course content for PCP development in cancer centers.

## 167

**TIMING OF CHEMOTHERAPY TEACHING: RESULTS OF A PERFORMANCE IMPROVEMENT STUDY.** Cathy Fortenbaugh, RN, MSN, AOCN®, Kim Consalvo, RN, BSN, OCN®, and Ann Vale, Pennsylvania Oncology Hematology Associates, Philadelphia, PA; Mary Pat Lynch, RN, MSN, CRNP, Joan Karnell Cancer Center at Pennsylvania Hospital, Philadelphia, PA; and Barbara Matthews, RN, OCN®, Pennsylvania Oncology Hematology Associates, Philadelphia, PA.

Receiving a diagnosis of cancer and undergoing subsequent treatment is often a stressful and frightening time for patients and their families. Increased anxiety makes it difficult to comprehend and process teaching. In order to combat these obstacles, nurses instituted standardized patient teaching guidelines to facilitate learning and promote safety. These included identifying patients by first and last name before beginning treatment, ensuring that patients received and read the chemotherapy teaching binder *The Patient Companion* before the first chemotherapy visit, had the opportunity to have any questions answered, verbalized an understanding of the chemotherapy agents they would be receiving, and addressing discharge instructions.

The purpose of the survey was to evaluate the effectiveness of the timing, and quality of the content of chemotherapy teaching.

50 patients receiving chemotherapy completed a questionnaire eight months after implementing the teaching guidelines. The patients who participated in the survey were not receiving their first treatment, biological therapy alone, or part of a clinical trial. They were asked nine yes or no questions about the safety and educational information they received from their oncology nurses. Participants were also asked two additional questions about the timing of teaching and ways nurses could improve the treatment education process.

The survey results were overwhelmingly positive. For seven of the nine questions, over 85% of patients responded that they had received the teaching and could discuss their chemotherapy agents. All 50 patients were satisfied with the teaching process and timing of teaching. Areas for improvement included a process for discharge teaching for patients who received treatment on multiple days in the same week and patients who received treatment for an extended period of time.

The outcomes of this project have significant implications for oncology nurses. Standardized guidelines for timing and content teaching help nurses overcome patient's anxiety and teach them effectively. Having guidelines also ensures that patients all receive the necessary information to manage side effects appropriately.

## 168

**INCREASING PATIENT SATISFACTION WITH TEACHING ON TESTS AND PROCEDURES.** Kerry Harwood, RN, MSN, and Renee Webb, RN, MSN, Duke University Hospital, Durham, NC.

Questions relating to any aspect of care can contribute to feelings of uncertainty in cancer patients. Research indicates that patients with higher levels of uncertainty are more depressed and less optimistic and able to care for themselves. Oncology nurses may not recognize or address patient education needs related to tests and procedures, resulting in uncertainty and its negative sequelae.

Institutional patient satisfaction data, in addition to focus group and patient education product evaluation, suggested room for improvement in providing tests and procedures information. While comprehensive strategies were in place for educating patients about their disease and treatments, teaching about tests and procedures was left to the clinicians doing the procedures. Due to patient dissatisfaction with this process, a process improvement initiative was begun as a collaborative effort between the patient education CNS and the Oncology Clinical Operations Director (COD).

Interventions were implemented in two phases. In the first phase, the focus was to increase awareness and availability of test and procedure information for patients. Examples of interventions include hallway and computer area posters listing test and procedure teaching guides

(TPTGs), monthly 'patient education chats' with nurses, identification and creation of additional TPTGs, and encouraging use of TPTGs during walking rounds. The second phase utilized the audit / feedback process. During monthly patient education chats, patient satisfaction scores for receiving information on tests and procedures were shared and compared with prior months. Nurses were encouraged to use the TPTGs to improve their unit patient satisfaction scores.

The effectiveness of the strategies implemented was measured through changes in the patient satisfaction survey question relating to information on tests and procedures. Mean score for the pre-intervention quarter was 87%, with a range of 82 to 91. Mean score for the post-intervention quarter was 95%, with a range of 90 to 100.

Cancer patients undergo many tests and procedures and these can serve as under-recognized areas of need for patient education. Comprehensive practice change strategies to overcome barriers and utilize audit / feedback using Press Ganey patient satisfaction scores can change practice and improve outcomes.

## 169

**INTRAPERITONEAL CHEMOTHERAPY PATIENT EDUCATION BOOKLET.** Jennifer Sao Lan leong, MS, OCN®, APRN, BC, Atlanta, GA.

Ovarian cancer is the fifth leading cause of tumor death in women. Eighty percent of all women are diagnosed in advanced stages (III-IV), and the five-year survival rate is 85%-95% when ovarian cancer is treated while disease is localized. The main line of treatment for ovarian cancer is cytoreductive surgery and tumor debulking. Intraperitoneal chemotherapy (IP chemo) with platinum and taxane is one of the newest treatments for ovarian cancer patients with peritoneal metastasis. Advantages of intraperitoneal chemotherapy include less systemic toxicity, direct and prolonged exposure of intra-abdominal metastases to the drugs, and eradication of cancer cells due to higher drug concentration. Disadvantages of IP chemotherapy include placement of a peritoneal catheter or intraperitoneal port, potential complications of abdominal pain and distention, ileus, intestinal perforation, bleeding and infection.

The main objective is to provide effective patient education on intraperitoneal chemotherapy and reduce mortality rate in ovarian cancer patients receiving IP chemo. Leventhal's theory of coping serves as the theoretical framework of the project.

A Patient Education Booklet is created based on patients' repeated requests for information and patients' anxiety over receiving intraperitoneal chemotherapy, and lack of intraperitoneal chemotherapy educational materials. Objective for the booklet is to present an overview of treatment procedure and potential side effects of treatment for patients. The project timeframe is 8 weeks. Literature review, data collection, budget development and interdisciplinary collaboration are utilized during the creation of the booklet.

At least 10% decrease in the mortality rate of ovarian cancer patients receiving IP chemotherapy infusion by year 2007 through patient education. More than 90% of patients and family will verbalize satisfaction in having their questions answered through the booklet. Evaluation questionnaires are distributed before and after patients read booklet.

Nursing implications include instilling chemotherapy solution after warming and checking for catheter patency according to protocol, repositioning patient for maximum surface exposure to drug, and drain if ordered, monitor for side effects and treat, patient education and documentation.

## 170

**TEACHING AND COORDINATING A COMPLEX TREATMENT REGIMEN.** Linda Person, RN, MSN, AOCN®, and Gloria Quioan, BS, RN, OCN®, USC/Norris Cancer Hospital, Los Angeles, CA.

A regimen for childhood leukemia that has been used in adults in Europe was introduced to our hematology clinic. The complex regimen consists of eight phases followed by up to two years of maintenance. The clinic nurse who coordinates these regimens was having difficulty scheduling the patients and communicating with them over the phone when they had questions or symptoms. The use of a worksheet that listed the timing of each phase was helpful for the clinician, but not the patient.

It was very important that staff members and patients knew the order of the regimen so that appointments for intrathecal medications as well as chemotherapy and supportive agents were ordered and given in the correct sequence.

To enhance and simplify the education and coordination of this regimen each phase of treatment was given a different color. The education and calendars for the corresponding phase was printed in the matching color. At the end of that phase of treatment all the colored sheets for that phase were destroyed by the patient who was then given the next phase materials in a different color. The RN was then able to review the schedule for this new phase.

Patients who have completed the regimen have stated that the colors and calendars helped to clarify their schedules of appointments, tests and medications. This empowered them as they arranged their daily lives. It simplified the nurse's role in coordinating and following multiple patients on this regimen.

This color system was especially helpful when the coordinating RN was not available or the patient spoke limited English. The patient could call the clinic or pharmacy and identify exactly what phase of the regimen they were receiving. It was cost effective and simple to begin and is now supported with the use of volunteers who prepare the packets of information. Some additional changes to the worksheet will further improve the usefulness of this system.

## 171

**TEACHING COLPOSCOPY: PROCESS AND OUTCOMES.** Carol Dallred, RNC, MSN, WHCNP, Joyce Dains, DrPH, JD, RN, FNP, BC, NAP, and Faye Gregory, RN, MSN, FNP, BC, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Cervical cancer is the second most common cancer in women in the world and, in the U. S., rural underserved women are at highest risk. Even though cervical cancer has decreased in the U.S. by 70% over the last four decades, 1.7 billion dollars is spent in the U. S. annually on cervical cancer treatment. The best and least expensive way to reduce the burden of cervical cancer is to detect the disease in its precancerous state. The pap test serves to screen for this disease, but colposcopy with biopsy is necessary for diagnosis of both precancerous and malignant disease.

In the U.S. many rural and underserved areas do not have a physician to perform colposcopy. Mid-level clinicians, such as Nurse Practitioners and Physicians Assistants, can acquire the skills to perform colposcopy successfully. However, there are limited numbers of programs that teach colposcopy. The largest educational program for this procedure does not provide hands-on training, and other programs last four or more days taking valuable resources out of the field for lengthy periods of time.

Professional Education for Prevention and Early Detection at M.D. Anderson Cancer Center has developed a unique colposcopy program to prepare mid-level clinicians to perform this critical procedure.

The 2-1/2 day program includes didactic, practice, and application experiences. Participants practice skills in the laboratory and then perform colposcopy of the normal cervix in the clinical setting.

A 20-item multiple-choice pretest and posttest is administered to ensure that the participants have acquired the essential knowledge base. Professional educators observe the participants performing colposcopy to ensure skillful performance.

Over a three-year period, over 50 clinicians from eight different states have received the necessary didactic and hands-on training to perform colposcopy. Pre and Posttest scores are available for 31 of the participants. Posttest scores were significantly higher than pretest scores ( $p < 0.001$ ) for each year and for all years combined. Posttest scores were about 15-20 points higher than pretest scores, indicating a substantial increase in knowledge. Feedback from participants indicates satisfaction with the program and successful integration of colposcopy into practice.

## 172

**DETERMINING THE USEFULNESS OF A BREAST CANCER EDUCATION TOOL INTRODUCED AT AN INITIAL VISIT WITH A COMMUNITY-BASED SURGICAL PRACTITIONER.** Tracey Tatum, RN, MS, FNP, OCN®, CJW Medical Center, Richmond, VA.

Early detection of breast cancer increases survival and patient's treatment options, thus decision-making. According to the ONS position statement on Quality Cancer Care and Patient's Rights, education is an important element in the cancer care continuum and it is the patient's right to "active participation in treatment decision making in an informed manner" (ONS, 2002). In a community-based practice, the patient is diagnosed and her care is frequently coordinated through a private surgi-

cal office affiliated with the hospital, where access to available hospital resources is first introduced. Because surgical intervention is not independent of other treatment options, the surgeon's office is where initial decisions are made that will affect the entire treatment plan.

The objective of this evaluation was to determine how beneficial it is to provide a written educational tool to newly diagnosed breast cancer patients at a surgeon's office where initial treatment decisions are made.

Newly diagnosed patients with breast cancer identified over a six month period through the hospital's cancer registry, were sent a seven-question survey about the usefulness of educational resources they utilized to make treatment decisions.

Ninety-four surveys were sent out with a 30% response. Only one patient reported receiving inadequate information. Forty two percent of the patients reported receiving this tool and  $> 1/3$  reported it to be one of the most useful sources of information. Over one-half of patients were knowledgeable of the breast cancer coordinator. All patients received education from their physicians and reported it to be helpful.

Oncology nurses are key providers of education that helps patients to make informed decisions. This evaluation determined that patients preferred receiving both verbal and written education from their healthcare practitioners. Overwhelmingly, these patients determined that they had the tools necessary to make good treatment decisions.

## 173

**ACTION! THE PRODUCTION OF A PATIENT EDUCATION DVD TO ENHANCE LEARNING.** Sheryl Stewart, RN, MS, AOCNS, CNS, Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH.

The National Adult Literacy Survey (1992) poignantly describes the levels of literacy in the American population. This translates into documented evidence that medication and safety issues and self-care problems exist for those who cannot understand printed information. Nursing is in a unique role to develop alternative methods for providing patient education. Visual images and audio can improve recall and enhance learning.

The purpose of this project was to develop a DVD to supplement written and verbal education on "How to Care for Your Central Venous Catheter (CVC)". The conceptual model for this presentation outlines the steps to produce a product that can be utilized effectively to supplement patient education.

- Multidisciplinary task group
  - Draft goals, objectives and propose core content
  - Conduct patient surveys
  - Conduct staff surveys
  - Develop a word document table to outline the script.
  - Develop Power Point template for title slides, photos of key visuals
  - Elicit patients and staff actors
  - Videotaping
  - Audiotaping of narration
  - Merge video and audio
  - Reconvene multidisciplinary task group and patient education advisors
  - Final editing
  - Movie premier day
- Project goals:
- Introduce patients and family members to central venous catheters placement
  - Reinforce education provided by healthcare providers on CVC care
  - Allow patients to learn information about CVCs at their own pace in a less stressful environment such as their home
- Objectives:
- Identify types and purpose for CVCs
  - Discuss patient responsibilities associated with having a CVC
  - Demonstrate how to care for a CVC

Higher acuity, shorter lengths of stays, and nursing shortages have brought many challenges to the arena of effective patient education. Utilizing visual teaching tools to enhance patient education promotes patient safety, adherence to the treatment plan, and accurate assessment of potential complications and implementation of self-care measures.

DVD's are not intended to replace oral and written education but to supplement it. The DVD can accompany a written packet of education materials. The DVD's will be used for "video on demand" to facilitate patient education in patient rooms and wait areas. The division of



homecare is able to utilize the DVD for the many patients who receive their CVC's as outpatients. The DVD can also be utilized by the many associated office practices.

## 174

**INCREASING PATIENT EDUCATION OPPORTUNITIES BY DEVELOPING A FAMILY RESOURCE CENTER.** Deborah Hay, RN, BSN, OCN®, Saint Luke's Cancer Institute, Kansas City, MO.

For many people, receiving a diagnosis of cancer provokes a deep sense of fear. Providing information and education in a caring and compassionate environment enables them to regain some control in their life.

The Family Resource Center (FRC) is a community resource center designed to provide education and psychosocial support to area cancer survivors and their caretakers. The FRC is a beautifully furnished area located next to the waiting room for The Cancer Institute's medical oncology and gynecologic oncology practice. The center offers educational and coping classes, exercise classes, a lending library, internet access, oncology nurse consultations, literature, behavioral health consultations, massage therapy, art therapy and connections to many other patient support services. Anyone who has been touched by cancer or has a desire for oncology education has access to the Family Resource Center services.

Healthcare professionals have an obligation to provide patients with an appropriate knowledge base to allow them to make informed decisions. Programs are provided by physicians or other health care providers presenting on their area of expertise. Through education provided by the FRC, patients have the opportunity to gain a better understanding of their disease process and treatment options, reducing fear and allowing them to make more informed choices about their care.

Patients and those in the community have one central, easily accessible and beautifully furnished area to get their educational, emotional and psychosocial needs met. More than 1,000 physical contacts have occurred in the first eight months of operation. Program evaluations are very positive with 100% of those who complete the evaluation stating the information they received was helpful and 100% stating they would use the services again if a need arises.

Oncology nurses in the inpatient and outpatient settings are very busy providing quality care to their patients. They have the privilege and responsibility to provide education about self-care. The Family Resource Center provides supplemental education on all kinds of topics including both physical processes and psychosocial processes. This grant funded program allows these educational opportunities and services to be provided to all patients and caregivers in the community at no charge.

## 175

**AN INNOVATIVE APPROACH TO IMPROVE QUALITY AND EFFICIENCY IN AN OUTPATIENT ONCOLOGY SETTING: CREATIVE APPLICATION OF FAILURE MODE AND EFFECTS ANALYSIS (FMEA) AND BEST PRACTICES.** Marcia Gruber, RN, MSN, MS, and Nancy Bertran, RN, BS, Roswell Park Cancer Institute, Buffalo, NY; and Mary Botter, PhD, RN, CSC Global Health Solutions, AL.

Most cancer patients receive care in an outpatient setting. The discovery of new and effective treatments and improvement in survival rates has led to a capacity crisis in outpatient settings. Oncology nurse managers are challenged to manage growth while continually improving the quality and efficiency of patient care. Use of Failure Mode Effects and Analysis (FMEA), a proactive method for identifying the most important areas for process improvements, was developed outside of health care but is being used with increasing frequency to improve patient quality and safety.

To address the challenges created by our continually increasing volume of outpatients, we decided to engage in an innovative use of Failure Mode Effects and Analysis (FMEA) to redesign our work processes. In combination with Best Practices, we developed an action oriented, evidence based approach to develop a future state plan for our outpatient clinics.

A multidisciplinary team of motivated stakeholders was engaged to assess the current status and design a future state for outpatient flow. A detailed flow chart was created to illustrate all steps in the process and identify obstacles to successful accomplishment of each step. Using consensus, the failure potential of each step was evaluated and assigned a score based on the likelihood of occurrence, likelihood of detection and degree of severity. The areas with the highest FMEA scores were then specifically addressed in the creation of a future outpatient flow.

The team then reconvened and assessed the new process steps using the same scoring method. A 27% reduction in risk was achieved with the future state design.

Early indicators show that our goal of managing growth and enhancing quality by improving work processes will be accomplished. Besides the FMEA score, other quantitative measures based on best practice benchmarks are being used to assess the effectiveness of steps or groups of steps as work flow changes are implemented.

Outpatient oncology nurses are constantly challenged to improve work processes to reduce wait times, enhance patient safety, and improve quality of care. The use of FMEA provides an inclusive and quantitative way to identify areas of highest risk and design measurable improvements.

## 176

**WHY AND HOW: THE JOURNEY TOWARDS PATIENT AND FAMILY CENTERED CARE.** Fern Rhinesmith, RN, BSN, MHA, and Nancy Newman, LCSW, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

Patient and family centered care (PFCC) is an approach to delivering health care that emphasizes partnerships between patients, families, and health care providers. Central to the concept of PFCC are the principles of dignity and respect, information sharing, participation, and collaboration. Exposure to PFCC programs at other institutions, desire for improved clinical outcomes, static patient satisfaction scores, and recognition that the approach is congruent with organizational values prompted our NCI Comprehensive Cancer Center to develop a PFCC initiative. Oncology nurses have always embraced the tenets of PFCC and are essential to its full implementation.

The purpose of this project is to chart the progress and movement in adopting PFCC and show the implications on quality and safety.

A steering committee was formed, followed by implementation of a Patient and Family Advisory Council. Patients and families have participated in every step of development of our PFCC program. Key steering committee members participated in a training workshop offered by the Institute for Family-Centered Care and a hospital self-assessment, developed by the Institute, was completed. Adopting PFCC required a thorough assessment of our philosophy, policies, and practices, as well as an evaluation of the driving forces of care. Posters and flyers were placed throughout the institution to invite patients and families to participate in a Patient and Family Forum, held to unveil our program and offer an opportunity for a large group to provide input.

Our institution's philosophy, like that of other cancer centers, has always acknowledged the importance of patient and family participation in care. However, adoption the PFCC approach has helped to highlight those areas where our policies and practices have not been congruent. The perspectives of patients and families are essential to addressing issues of quality and safety and examples of how policies have changed and/or been adopted will be presented.

Oncology nurses, while historically grounded in the concepts of PFCC, must be supported by their organizations to fully integrate this approach into practice. Likewise, nurses can be instrumental in translating this important concept into care delivery.

## 177

**IMPROVING CHEMOTHERAPY TURNAROUND TIME IN AN OUTPATIENT HOSPITAL-BASED INFUSION CENTER.** Darlene Johnson, RN, BSN, CJW Medical Center, Richmond, VA.

Because of recent CMS rulings regarding the reimbursement of chemotherapy administration in the physician offices, an increasing number of patients are being treated in hospital-based outpatient infusion centers. This transition to the hospital setting often finds the patient routed to many different areas for registration, lab services, and chemotherapy administration. Therefore, efforts to improve on this process are necessary for promoting patient satisfaction while maintaining patient safety.

The objective of this CQI project was to improve chemotherapy turnaround time in a hospital-based outpatient infusion setting. The goal was to identify areas for improvement in the overall process, while maintaining patient safety measures.

A flow chart was utilized to trace the entire process from entering the hospital to actual administration of chemotherapy. Areas identified for improvement included patient scheduling, timeliness and thoroughness of physician orders, pharmacy completion of chemotherapy formulation,

and timely lab services. A log sheet was utilized for documentation and data was reported quarterly to our cancer committee.

A review of patient scheduling noted that 75% of patients were scheduled at 9 A.M. or earlier, therefore, guidelines were developed. 70% of patients required lab work prior to chemotherapy administration necessitating the implementation of approved lab parameters and a dual role staff position of phlebotomist and patient registrar. Delays noted in pharmacy preparation of chemotherapy resulted in the implementation of a designated oncology pharmacist and a satellite pharmacy in the infusion center. All chemotherapy orders are reviewed by pharmacy and nursing on the day prior to administration. These changes have decreased chemotherapy turnaround time from 2.5 hours to 1.5 hours and have resulted in 95% of patients and 100% of physicians expressing high levels of satisfaction with infusion center services.

With proposed reimbursement changes, outpatient hospital-based infusion centers will continue to be utilized for an increasing number of patients. Nurses have the opportunity, through monitoring of processes, to make changes that will work toward improving patient care. This project has reinforced the importance of data collection and how effective process improvements can occur as a result of this.

## 178

**MANAGEMENT OF CONTINUOUS CHEMOTHERAPY INFUSION PUMPS IN THE OUTPATIENT SETTING: IS THIS BENEFICIAL TO THE PATIENT AND TO THE CLINIC?** Kelly Mercer, RN, and Sandra Bailey, Kimmel Cancer Center at Johns Hopkins, Lutherville, MD.

Historically, all patients requiring continuous chemotherapy and being treated in an office-based practice were referred to a homecare agency for management of this aspect of their care. The homecare agency provided the infusion pump, medication and supplies, and the nursing care associated with initiating and maintaining the infusion. Additionally, the homecare agency was on call for the patients should they encounter any problems. This method of providing care resulted in patients interfacing with two sets of nurses, and nursing staff spending valuable time coordinating efforts and exchanging information. The financial cost to the patient for the initial homecare visit was \$789.42, excluding the cost of the medication. The cost for the same service provided in the clinic was \$381.11.

To improve continuity of patient care, reduce financial burden to the patient and enhance clinic revenue in patients receiving continuous infusion chemotherapy in the outpatient setting.

A pilot for providing continuous 5-FU throughout the clinic was undertaken. A vendor was contacted to provide the infusion pumps and on-call troubleshooting services. Registered Nurses in the clinic provided patient education, initiation, and discontinuation of the infusion. The clinic pharmacist prepared and dispensed the 5-FU. The need for a homecare referral was eliminated.

Patients participating in the pilot were afforded continuity in their patient care. The nurses responsible for the continuous infusion 5-FU provided this care throughout the patients' entire course of treatment. The patients participating in the pilot realized an average cost savings of \$408.31 for the initial set-up. The clinic generated revenue of \$29,000 over a 14-month period through troubleshooting and refilling of the pump, the drug, and doctor and nurse visits associated with the treatment plan. The goals to improve continuity of care and reduce patient cost, as well as enhance clinic revenue, were met in a safe manner.

## 179

**ENHANCING PATIENTS' TRUST IN ONCOLOGY NURSING CARE: A CHALLENGE FOR NURSING LEADERS.** Laurel Radwin, RN, PhD, University of Massachusetts-Boston, Boston, MA; Gail Wilkes, RN, AOCN®, Boston Medical Center, Boston, MA; Linda Curtin, RN, PhC, Brockton Hospital, Brockton, MA; Christine Saba, RN, BS, Cape Cod Hospital, Falmouth, MA; Lisa Tracey, RN, MS, NP, Massachusetts General Hospital, Boston, MA; Joanne Garvey, RN, PhC, Brigham and Women's Hospital, Boston, MA; John Whitehouse, RN, BS, Boston Medical Center, Boston, MA; Camille Sanabria, Brigham and Women's Hospital, Boston, MA; Amber Schrantz and Liliana Teixeira, University of Massachusetts-Boston, Boston, MA; Mary Hackel, RN, BS, Massachusetts General Hospital, Boston, MA; and Kimberly Willis, RN, BS, New England Medical Center, Boston, MA.

A crisis in the public's trust in health care providers and the health care system has been declared, with assertions that trust has never been lower.

Patients' trust in physicians has been examined repeatedly and is routinely measured. However, close scrutiny of and measurement of trust-inspiring oncology nursing care is in its infancy.

A cancer diagnosis presents an extreme personal challenge and oncology patients' trust in their nurses is critical to their well being. Oncology nurse leadership must respond by assuring that practice environments enhance nursing interventions that inspire patient trust.

The purpose of this paper is to provide oncology nurse leaders with a framework to structure environments that promote patients' trust in nurses. A middle-range theory of high quality nursing care will frame the discussion. Two scales will be introduced. One measures trust-inspiring interventions and the second measures patient trust.

Qualitative studies have revealed that specific interventions inspire patient trust. Nurses who inspire trust are caring, attentive and proficient. They sustain care continuity and assure that care is coordinated. Nurse leaders, in turn, are challenged to implement strategies that support trust-inspiring interventions. Strategies include practice models that enhance the primacy of the individual nurse-patient relationship, formal recognition programs for expert oncology nurses, and institutional support for interdisciplinary communication and collaboration.

The Oncology Patients' Perceptions of the Quality of Nursing Care Scale (OPPNCS) is one measure to evaluate patient-centered nursing interventions that inspire trust. Subscales include patients' perceptions of nurses' responsiveness (encompassing nursing interventions that are caring and attentive), care individualization, nurse proficiency, and care coordination. In addition, the Trust in Nurses' Scale is a second measure that uniquely evaluates the degree to which patients' trust their nurses.

Nurse leaders are challenged to provide efficient, cost effective oncology nursing care to clinic or hospitalized patients experiencing short lengths of stay. Theories of high quality nursing care provide frameworks for promoting trust-inspiring nursing care environments. Extant scales allow for the measurement of patients' perceptions of such care.

## 180

**PATIENT DELAYS AND COMMUNICATION: NEW CLINICAL LEADER ROLE RESULTS IN POSITIVE OUTCOMES.** Eileen Hill, RN, BSN, OCN®, Josephine Visser, RN, BSN, OCN®, Linda Heckel, RN, OCN®, Vicki Dugger, RN, OCN®, and Margaret White, RN, COTA/L, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

Communication breakdown, symptom management issues, and lack of appropriate laboratory studies translated to patient delays in an NCI Comprehensive Cancer Center's busy outpatient Infusion Center. While satisfied with the quality of care provided, patients expressed dissatisfaction with time spent waiting for treatment. The development of a Clinical Leader role was initiated to help with patient flow through the Infusion Center, thereby decreasing delays in treatment. The primary responsibilities of the Clinical Leader (CL) was to serve as liaison for all interdisciplinary teams, make patient assignments, and communicate with patients.

The purpose of the project was twofold: to decrease delays in patient treatment in our outpatient Infusion Center and to improve communication with patients when delays were unavoidable.

Experienced RNs in our outpatient Infusion Center brainstormed strategies to improve patient flow. The group identified a need for a central figure, a CL to coordinate operations and troubleshoot problems as they arose. All interdisciplinary departments were instructed to notify the CL with patient care issues such as problems with central lines, abnormal patient vital signs, add-on treatments, symptom management, and patient complaints. The CL addressed problems that arose before the patient was sent back to the infusion area to receive treatment. When treatment could not be delivered promptly, the CL communicated the confounding issues directly to the patient and answered questions.

Addressing issues before the patient was seated for therapy served to actually expedite the treatment itself. Nurses administering treatments were able to focus on safety and administration concerns without being distracted by other problems. Implementation of the CL role also helped to improve communication among all Infusion Center staff. Patient satisfaction data is currently being collected to validate our perceptions.

Patients faced with a diagnosis of cancer, and prospective treatment, are acutely aware of the value of their time. Strategies to decrease wait times,

such as the one described must be continually explored and implemented. Input from our patients and staff suggests the Clinical Leader role has been successful, but we continue to evaluate and challenge ourselves to find ways to improve patient flow.

## 181

**IMPROVING UTILIZATION IN A CHEMOTHERAPY CENTER.** Marcia Gruber, RN, MSN, MS, and Debra Smith, RN, Roswell Park Cancer Institute, Buffalo, NY.

Increasing number of patients requiring chemotherapy, Medicare reimbursement changes, arrival of new medical oncology faculty, an increase in the number of approved research drug trials, patient appointment preferences and the nursing shortage have all contributed to the challenge Nurse Managers face to maximize utilization while maintaining patient safety in a chemotherapy administration environment.

We decided to perform a study to define and identify issues related to utilization of our existing chemotherapy services. The purpose of the study was to identify opportunities to improve utilization while not compromising patient safety or wait time.

Staffed capacity and physical capacity were defined and agreed upon by the team. Planned utilization and actual utilization were also defined and data collected to describe each. Baseline data was collected on volume, staffed chair hours, cancellations, appointment distribution, no-show and late patient arrivals, treatment duration trends and a variety of obstacles to on-time starts. Patient focus groups were also held to understand patient preferences with regard to current scheduling practices and the existing facility. Based on the definitions and data, interventions were planned, implemented and data collection repeated to measure the effectiveness of the interventions. Interventions included changing staff start times, changing the distribution of appointments throughout the day, opening more chair hours, patient reminder calls, creative staff scheduling, free patient parking for later appointments, secretary training, adding an additional blood drawing area and feedback to oncologists about cancellations and order completeness.

These interventions have increased the average number of patients receiving treatment each day from 92 to 108 with no increase in adverse events or overtime. The frequency of the obstacles to on-time starts reduced measurably in most areas.

Nursing staff participation in the data collection and implementation of the interventions helped them understand the true picture and where they can make a difference. The interventions were successful and should be applicable in most chemotherapy settings.

## 182

**REDUCTION IN BLOOD SPECIMEN TURNAROUND TIME.** Jane Caplinger, RN, OCN®, William Beaumont Hospital, Royal Oak, MI.

Due to the high volume of central lines on our oncology unit, most blood specimens are drawn by nursing staff. Barriers to timely blood specimen collection and processing include: staffing; prioritization; hospital structure and system complexity; supply availability; and resistance to change.

The purpose of this project was to reduce blood specimen turnaround time on a 48-bed adult inpatient oncology unit in a large metropolitan area teaching hospital. Patients, physicians and nursing staff complained that lab results were not available until late in the day. This resulted in additional phone calls and treatment delays. Quality indicators included blood collection, delivery, and completion times, as well as the time blood was sent from Blood Bank for transfusion. This data, along with increasing hospital costs and competition, necessitated the need to change.

An audit of blood collection, delivery, completion, and delivery times was completed. A literature review was done. An interdisciplinary team was formed. Equipment needs and system changes were identified. A new process was piloted and evaluated. The success of this process change will be shared throughout our institution.

Time study results were reviewed and interrupted. Blood collection, delivery, completion, and delivery times were compared to pre-implementation statistics. Patient, physician and staff satisfaction were surveyed.

An efficient and effective system to draw, deliver and process blood specimens reduces cost, enhances quality of patient care and improves patient, physician and nursing satisfaction. Other hospitals may adopt this process to create superior patient care outcomes, and improve nursing practice and customer satisfaction.

## 183

**ONCOLOGY NURSES—LOGISTICAL EXPERTS IN THE ADMINISTRATION OF COMPLEX CANCER TREATMENTS.** Marci Bartley, RN, MSN, OCN®, and Nancy Devito, BSN, OCN®, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

Treatment complexities in the management of oncology patients present a myriad of medication administration issues for the oncology nurse. Chemo and biotherapy regimens include multiple intravenous agents, fluids, and antiemetics. Symptom management may include antibiotics, antifungal, antiviral, antidiarrheal, and immunosuppressive agents, as well as pain medications, total parenteral nutrition, and blood products. Frequently, even the presence of multiple lumen central venous catheters prove inadequate for incompatible treatment agents. These recurring clinical challenges account for significant nursing time spent verifying compatibilities as well as timing of treatment agents in order to assure safe and effective provision of care for our patients.

The purpose of this poster is to present current compatibility information and creative administration strategies for frequently used regimens at one comprehensive cancer center that will serve as a useful and concise resource for oncology nurses.

In addition to compiling compatibility information, examples of administration logistics and possible pitfalls of improper administration will enhance patient safety.

Administration of complex medication regimens comprises a significant portion of care provided by the oncology nurse. In addition to heightening awareness about compatibilities, this poster will provide a concise, consistent, and up-to-date resource for oncology nurses, along with administration examples; thus contributing to the safe and effective provision of that care.

Specialized knowledge, creative genius, and logistical expertise are integral components of oncology nursing care.

## 184

**NINE MONTH EVALUATION OF A SYMPTOM MANAGEMENT CLINIC.** Kyra Whitmer, PhD, RN, University of Cincinnati, Cincinnati, OH; Rebecca Braun, College of Nursing, Cincinnati, OH; Cheryl Wilhelm, RN, OCN®, University Hospital, Cincinnati, OH; Jane Pruemer, PharmD, BCOP, FASHP, College of Pharmacy, Cincinnati, OH; Zeina Nahleh, MD, College of Medicine, Cincinnati, OH; Abdul-Rahman Jazieh, MD, MPH, College of Medicine, Cincinnati, OH.

Last year we reported on the needs assessment and development of a Symptom Management Clinic (SMC). The SMC was formed to care for outpatient oncology patients at one location who presented with complex symptoms. The SMC has a collaborative and interdisciplinary team approach. Medical oncologists, clinical pharmacist, nurses, complimentary therapist, social worker and dietician comprise the team. This year we report on a nine month evaluation of the SMC and patient outcomes.

1. To describe oncology patients referred to SMC.
2. To describe presenting symptoms.
3. To determine patient outcomes.

Retrospective review of medical records and appointment schedules was undertaken for the first nine months of SMC.

Of the 49 patients referred, the mean age was 55 years, most were males (27), Caucasian, (28), unemployed (36) and had a diagnosis of head and neck cancer (12). The most common referral was for pain management (40).

Pain Scores		
(0-10 linear scale; n=49)		
Pain	Initial	Third Visit
Current	5.8	4.6
Usual	6.0	5.0
Worse	9.1	8

Quality of Life (QoL) was measured using the FACT-G at the initial visit and 3 months later. QoL scores can range from 0 to 104, the higher score indicating a better QoL.

Pain & QoL Scores		
n=11		
Initial	3 mon	
Pain	5.7	5.9
QOL	54.3	58.4



Pain and QoL scores tended to change in the expected direction. Although changes in pain and QOL scores were not statistically significant, patients stated satisfaction with their clinical improvement. SMC is a model for delivery of care for oncology patients with complex and chronic symptoms and represents an appropriate platform to address these symptoms and alleviate patient suffering.

## 185

**NATIONAL CANCER INSTITUTE FORMS PARTNERSHIP WITH HOSPITAL IN AMMAN JORDAN TO ESTABLISH PREMIERE CANCER CENTER IN MIDDLE EAST.** Georgia Cusack, RN, MS, AOCN®, DHHS-NIH, Bethesda, MD; Maria Decarvalho, RN, MS, AOCN®, Genentech, San Francisco, CA; and Ahmad Al Khateib, RN, MSN, and Muna Aleco, RN, MSN, King Hussein Cancer Center, Amman, Jordan.

The King Hussein Cancer Center (KHCC) is a 128-bed hospital in Amman, Jordan. The primary mission of KHCC is to ensure the highest quality of care for cancer patients in the Middle East. The vision of KHCC is to achieve national distinction as a magnet environment embracing an evidenced-based practice model with an emphasis on professional practice, education, research, shared leadership, caring, and culture.

To establish the premiere training center in the region, the KHCC collaborated with nurses from the National Cancer Institute to provide education to nursing staff. The Plan, Do, Check, Act (PDCA) Model was utilized to guide program development and evaluation.

The five-month program provided a group of nurses at KHCC with the knowledge and skills to deliver competent nursing care to patients according to oncology nursing standards. Nurses were instructed on how to perform a comprehensive nursing assessment of the cancer patients' physical, psychosocial, spiritual and educational needs. Case studies, class presentations, and unstructured seminar sessions were included as part of the didactic curriculum. Clinical logs provided a reflective journal of learning objectives and demonstrated how the student was meeting them, through analysis and evaluation of critical incidents, and generalization to potential future experiences. Education coordinators and students shared the responsibility for creating an educational climate that fostered mutual respect, integrity, intellectual inquiry, critical thinking, creativity and effective communication. NCI staff participated in policy and procedure development. Evaluation of the program included comparison of pre and posttests, module exams and clinical observation.

Overall the program was a great success. Seventeen of twenty nurses completed the program. The top seven nurses were provided with additional training in the United States. There was a 50% increase in median tests scores on posttest evaluation. Program strengths included an increased understanding of oncology concepts. Policy and procedure development provided guidelines for further development. Program limitations included initial language barriers and staffing shortages, causing staff to work long hours in addition to training.

Establishing a collaborative relationship to educate nurses at the KHCC has enabled the institution to become a comprehensive training center for cancer education, research, and practice.

## 186

**PATIENT NAVIGATOR ACADEMY.** Caryn Steakley, RN, BSN, Elizabeth Ness, BSN, MSN, L. Michelle Bennett, PhD, and Garcia Roland, MD, National Cancer Institute, Bethesda, MD.

Cancer incidence and death rates for all cancers combined was recently reported to have decreased from 1991 through 2001. When data is examined by race/ethnicity, or socioeconomic status, significant differences or disparities emerge. The National Cancer Institute (NCI) defines disparities as differences in the incidence, prevalence, mortality and burden of cancer that exist among specific populations in the United States.

One potential strategy to reduce cancer health disparities is through the use of Patient Navigators. Patient Navigation refers to the assistance offered underserved populations in "Navigating" through the complex healthcare system and overcoming barriers in access to care and treatment. Recognizing the importance of Navigators, the NCI's Center for Cancer Research in collaboration with the Center to Reduce Cancer Health Disparities, sponsored the first NCI Patient Navigator Academy (PNA) in spring 2005.

The PNA was developed as an educational program for Patient Navigators designed to provide an overview of cancer, its treatment and psy-

chosocial impact on individuals, and an overview of clinical trials and resources available for access to cancer clinical trials.

Telephone interviews were held with all participants prior to the 3-day workshop to complete a needs assessment. To supplement the course material, each Navigator participated in a "Clinical Experience" shadowing a research nurse to experience how the clinical trials process occurs within the NCI intramural program. Evaluations were completed at the end of the training with a follow-up telephone interview several months later. The majority of participants indicated that the PNA accomplished its objectives and provided a valuable learning experience.

The Patient Navigator has tremendous potential to play a critical role in our national effort to enhance health outcomes and eliminate cancer health disparities. The Patient Navigator Outreach and Chronic Disease Act of 2005 were enacted into Public Law in June 2005. This law authorizes Health Resources and Services Administration (HRSA) to administer a \$25 million demonstration grant program designed to provide Patient Navigator service with the goal of reducing barriers and improving healthcare outcomes

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**IMPLEMENTATION OF A PRIMARY NURSING MODEL TO OPTIMIZE PATIENT CARE AND SAFETY IN AN OUTPATIENT CHEMOTHERAPY UNIT.** Jennifer Olstrom, RN, BSN, OCN®, and Patty Albanese, RN, OCN®, Memorial Sloan-Kettering Cancer Center, New York, NY.

Growth in outpatient chemotherapy administration has increased over the last 2 years at this comprehensive cancer center. Patient volume and acuity as well as treatment complexity present a daily challenge to safety, quality and efficiency in our decentralized, disease-specific chemotherapy treatment units. Evidence shows that clinical models that foster continuity of care delivered by knowledgeable staff can improve patient outcomes related to administration errors and patient satisfaction.

Despite the increase in volume and acuity and the ever present demand for decreasing wait times, the chemotherapy nurses in our thoracic chemotherapy unit were intent on maintaining the quality of care they had always delivered. . The nurses designed a system based on an effective collaborative practice model that had been in place with the office practice nursing staff for over a decade. With the expectation that the patients will safely be treated in a quick and efficient manner in this busy environment, the chemotherapy nurses were eager to optimize the quality of care provided.

Each registered nurse on the treatment team assigned themselves to a physician and his clinic. A staff scheduler facilitates this process in conjunction with the nurse leader to ensure adequate coverage. The physician, office practice nurse and chemotherapy nurse review patient schedules daily and discuss any changes in treatments or plan of care. Additional patient issues are managed in the treatment area where the chemotherapy nurse has full knowledge of the plan

Multiple outcomes were used to evaluate the practice model including chemotherapy error rates; patient wait times; patient, nurse and physician satisfaction, and compliance with scheduling. This presentation will include the results of the evaluation

Benefits were observed by the nurses, physicians, and patients. Nurses developed a disease specific expertise, resulting in more focused patient assessments and skilled symptom management. Consistency of care enhanced patient education, nurse/patient communication, and awareness of a patient's physical and psychosocial needs throughout the duration of treatment. As all ambulatory chemotherapy units struggle with the common challenges of increasing demand for resources, this initiative can serve as a model for maintaining quality care for patients.

## 188

**PROMOTION OF FAMILY NURSING IN MEDICAL DIVISION II AT LANDSPÍTALI UNIVERSITY HOSPITAL IN ICELAND.** Guðbjörg Guðmundsdóttir, RN, BSc, MSN, CNS, Arndis Jónsdóttir, RN, BSc, MSN, Nanna Fríðriksdóttir, RN, BSc, MSN, CNS, Svandís Iris Halfdanardóttir, RN, BSc, MSN, CNS, and Thorunn Saevardsdóttir, RN, BSc, MSN, Landspítali University Hospital, Reykjavík, Iceland.

The importance of including the family in the nursing care of a patient with a malignant disease seems obvious, but still the literature shows that nurses use many tactics to avoid deeper contact with family members of patients. By implementing a model of family nursing at the hospital

where the nurses are educated and given support on the unit this can be changed and the nurses will feel more empowered in including the family in their nursing care.

The purpose of the intervention was to promote family nursing at the medical division II (oncology/haematology) at the Landspítali university hospital (LSH) in Reykjavik Iceland. The family nursing model from Dr. Wright and Dr. Leahy in Calgary, Canada was chosen to guide family nursing and the goal was that within a year family nursing would be more evident in nursing documentation by at least 20%. This would be done by giving workshops for nurses where the fundamentals of the nursing model were presented followed by exercises including role playing.

Interventions included a spot check of all patient charts at the medical division on a chosen day, head nurses were then asked to nominate two nurses from each unit that would serve as key nurses in the project, a two day workshop was then given to those key nurses. In that workshop the family model was extensively explained and the nurses took part in various exercises including role playing. Later, half-day workshops, with a condensed version of the model were given to all nurses at the medical division. The key nurses functioned as support for other nurses on the units to change their practice. A year from the initial spot-check, another spot check was performed.

The patient charts were evaluated at the beginning and end of the project. The same issues were checked on both occasions, by the same inspectors to enhance the accuracy of the project. Focus group meetings were held with the key nurses to evaluate their experience of the project.

By structuring nursing care, educating and supporting nurses through change family nursing is more visible at LSH.

## 189

**OPTIMIZING CIA MANAGEMENT IN A RURAL CLINICAL SETTING: WHAT CAN ONCOLOGY NURSES DO?** Marie Hajek, RN, OCN®, and Dianne Smith, RN, BSN, OCN®, Avera Medical Oncology and Hematology, Sioux Falls, SD.

Oncology patients often develop chemotherapy-induced anemia (CIA), which can be treated with erythropoiesis-stimulating proteins (ESPs) epoetin alfa (EA) and darbepoetin alfa (DA). ESPs can increase hemoglobin (Hb) levels, reduce transfusion requirements, and decrease fatigue. Our rural clinic analyzed the efficacy of DA versus EA and the impact of ESP schedules on patients (who often drive >70 miles to our clinic). Oncology nurses are in a key position to tailor ESP therapy so that patients can receive optimal anemia management with the least number of clinic visits.

To facilitate development of ESP guidelines, our clinic compared the efficacy of DA with EA in patients with CIA and evaluated how ESP therapy affected patient time and clinic resources.

Data were collected from a retrospective chart review. Patients (n=18) were randomly selected adults receiving chemotherapy (diverse regimens for various types/stages) and an ESP (200mcg Q2W DA or 40,000U weekly EA). Data were collected for 16 weeks after initiation of ESP therapy (at Hb 8.3 to 10.8g/dL). If no response occurred after 8 to 10 weeks, the ESP was escalated to 300mcg Q2W DA or 60,000U weekly EA.

Both ESPs generated a response (increased Hb levels and reduced transfusion requirements) in 60-70% of patients. We also found that ESP therapy was neither consistently initiated at Hb <11g/dL nor consistently administered on a regular schedule. However, fewer injections were missed on the DA Q2W schedule compared with weekly EA.

Since DA and EA had comparable efficacy, our clinic converted to DA because Q2W dosing required fewer clinic visits (increasing patient compliance and staff convenience). Our physicians developed DA guidelines that led to a standing DA order and made CIA management at our clinic (and satellite clinics) consistent with established NCCN guidelines. Anemia therapy with DA is now initiated when Hb first reaches <11g/dL and is administered at 200mcg Q2W or 300mcg Q3W per physician direction for increasing patient convenience/compliance. Oncology nurses can now provide patients with anemia therapy that may require fewer clinic visits, thereby tailoring CIA management to meet patient needs in a rural setting.

## 190

**PERSONALIZED MEDICINE: WHAT NURSES NEED TO KNOW.** Susan King, RN, MS, OCN®, Genitope Corporation, La Jolla, CA.

Oncology nurses are all familiar with the targeted therapies that have been approved for use in a variety of cancers in recent years. Many of these

targeted therapies have accompanying lab tests to confirm the patient's tumor expresses the target.

Clinical trials are currently underway studying patient-specific therapies. These include personalized immunotherapies made from the patient's tumor and designed to activate the patient's immune system to recognize and eliminate tumor cells while leaving normal cells unharmed.

Because these therapies are personalized therapies, with each therapy custom-made for one specific patient, the implications for nurses administering these products has never existed before. The product requires a significant amount of time to produce and cannot always be replaced immediately should an error in storing, handling or administration occur.

While personalized immuno therapies have been studied for many years, oncology nurses need to understand:

- the function of the immune system so they can explain these therapies to patients,
- the mechanism(s) of action of these types of treatments,
- the adverse events most often reported,
- the implication of administering other agents, such as steroids and monoclonal antibodies, which may effect the immune response,
- the implications of flow cytometry results in determining suitable patients, and
- the importance of specimen/biopsy handling in making these therapies.

The important role of the nurse in personalized medicine, specifically personalized immunotherapy will be described for oncology nurses not familiar with the work being done in this area. Their role is vital in specimen collection and handling, educating patients and other healthcare providers, including oncologists, pathologists, surgeons, pharmacists, as well as general practice physicians about these new agents being studied.

Nurses have a unique ability to learn about new therapeutic categories and translate their knowledge to patients and other healthcare providers in a way that makes it easy for everyone to understand. It can be challenging to understand all of the new treatments but the more we can learn about agent while they are in clinical trials, the better prepared we are to answer questions and the more knowledgeable we appear to others.

## 191

**AN INTEGRATIVE WELLNESS APPROACH TO CANCER CARE.** Kathleen Graham, RN, MS, CS, AOCN®, and Marlene Runyon, RN, BSN, OCN®, Franciscan Skemp Healthcare, La Crosse, WI.

Despite the positive research findings on the effect of integrative therapies and supportive care on patient coping and wellness, it is often difficult to assist patients in integrating these into their routine cancer care.

Oncology nurses are in a unique position to introduce patients to services that will help them cope during this difficult time. However, RN's in most community based cancer centers rarely have the time and may lack the knowledge base to teach new coping skills or educate patients about integrative therapies.

In response to the recognized benefit of integrative therapies and supportive care, we have developed an innovative model to help patients learn about and integrate these services.

The purpose of this poster is to describe components of an Integrative Cancer Wellness Model and how the components are integrated into the person's medical care. The goal of the program is to improve health and enhance wellness by treating the whole person: body, mind and spirit. The patient is supported in accessing their inner qualities of healing and developing their own style of coping.

The Cancer Guide (CG), an oncology certified nurse, receives referrals for all newly diagnosed cancer patients, and ensures that everyone has knowledge of the Integrative Wellness Program. The CG introduces Cancer Center services, assesses patient needs, and makes appropriate referrals to the cancer support team and integrative therapies. The cancer support team consists of a chaplain, dietician, social worker and oncology clinical nurse specialist. An eight week Mind/Body Skills Group, a monthly cancer wellness series, Cancer Resource Center, and an array of integrative therapies such as Healing Touch, Reiki and massage therapy are offered.

The model has received positive patient feedback on Press Ganey Satisfaction Surveys and through other informal measures such as patient interviews, and written evaluations for the Mind/Body Skills class and monthly wellness programs. Feedback is utilized to improve services offered to patients.

Promoting wellness while medically treating the patient's cancer is a major focus for all oncology nurses. The use of this model enables all patients to have access to supportive and integrative therapies and can be easily duplicated.

## 192

**GENETIC CANCER SCREENING: PROCESS OF IDENTIFICATION OF APPROPRIATE PATIENTS FOR TESTING IN A COMMUNITY ONCOLOGY SETTING.** Julie Peerboom, RN, OCN®, Northwest Medical Specialties, Tacoma, WA.

The availability and clinical implications of genetic cancer testing continues to increase. As community oncology practices continue to see high volumes of patients, a genetic cancer screening process is needed to identify appropriate patients for genetic cancer testing in a consistent and expedited way. Oncology nurses play a major role in identification and management of these process to ensure that appropriate patients have access to this testing.

A screening tool has been implemented that identifies patients suitable for genetic cancer testing. This tool ensures that all patients within this community oncology practice are considered for genetic cancer testing as a routine part of their oncology care.

Each new patient to the practice has a medical records review to identify potential characteristics that warrant consideration for genetic cancer testing. Previously determined characteristics are obtained from the patient medical record after the initial visit. A documentation form is sent to the treating provider detailing identified characteristics, prompting the provider to determine if patient is a suitable candidate for genetic testing based on their presenting clinical picture. All new patients' records are reviewed within one week of their initial visit.

Particularly in the areas of colon cancer and breast cancer, genetic testing plays a role in treatment planning and family considerations. Genetic testing also provides an opportunity for patient and family teaching related to cancer risk, and recurrence of disease. Oncology nurses within the practice have had increased education and exposure to genetic testing as a result of this process, thus putting themselves in the position of providing increased knowledge to the patients they care for.

Genetic testing will continue to become an integral part of the care and management of the oncology patient with specific cancer diagnosis. In order for oncology practices to be able to deal with increasing volumes, screening processes must be in place that are streamlined and consistent. Continuous evolution of genetic testing availability will require the oncology practice to continually evaluate screening tools and processes to ensure the intended goals are reached.

## 193

**SECOND HAND SMOKE AND CANCER: CURRENT EVIDENCE AND FUTURE DIRECTIONS IN RESEARCH.** Terry Throckmorton, PhD, RN, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Conclusions from epidemiological and toxicological studies supported causal relationships with lung cancer beginning in 1986. Although the research has not identified ETS as the specific source of benzene intake, benzene is a component of ETS and has been linked to leukemia. The observed incidence of head and neck cancers in individuals with none of the usual precursors has led to a renewed interest in ETS as a potential source of cancer. Although research supports that ETS is less concentrated than directly inhaled tobacco smoke, the exposure begins at an earlier age and continues longer.

The purpose of this presentation is to provide an overview of the issues related to second hand or environmental tobacco smoke (ETS), measurement strategies, evidence available on ETS as a potential causal factor in the incidence of cancer, and suggested content for clinical assessment of exposure.

An extensive literature review and interviews with clinicians and epidemiologists were used to gather the information related to definitions, composition, measurement, available research, and future directions for research and patient assessment.

Evidence Based Practice guidelines were used to evaluate the research. Definitions, composition of ETS, and measurement strategies were derived from the literature and interviews.

Passive smoking is the term used to describe the inhalation of second hand or environmental tobacco smoke (ETS). Evidence of health risks of passive smoking is derived from epidemiological or toxicological studies.

Measurement of ETS includes that of small particles that can penetrate the lung, as well as, of carbon monoxide, nicotine, and benzene. Passive smoking can also be measured by biomarkers in blood, urine, or saliva.

Degree of exposure of nonsmokers depends on the number of smokers, smoking patterns, size of the room, amount of outdoor air, and the use and efficiency of air cleaners.

Currently, general assessments of newly diagnosed and potential cancer patients are focused on their personal smoking behaviors. Incorporation of assessments of exposure to ETS may be warranted. Suggested content for practical assessment guides will be provided.

## 194

**TOBACCO PREVENTION AND TEENS.** Kim Plastini-Mertens, RN, MSN, OCN®, Memorial Sloan-Kettering Cancer Center, New York, NY.

Lung cancer is the leading cause of cancer death the U.S. In 2005 an estimated 160,440 deaths will occur. Tobacco use is a leading cause of lung cancer. Majority of smokers begin smoking before the age of 18 years old. Each day, 2,000 teenagers become regular smokers. Nurse led measures to reduce teen smoking could have long term effects on overall tobacco control.

Evidence shows that nursing led smoking cessation interventions increase the success rate by 50%. The purpose of this presentation is to make oncology nurses aware of the effectiveness of a school-based community program to prevent tobacco use among teenagers. Knowledge of harmful effects of tobacco may influence teenager's attitudes towards smoking. This can be an effective strategy to reduce tobacco use among teenagers.

26 Eighth grade students were provided with a 30-minute presentation that outlined the harmful effects of tobacco, avoidance strategies, entertainment and tobacco industries influence, and a focus on Lung Cancer. Knowledge and attitudes were measured using a pre and post presentation survey. American Cancer Society handouts were provided and the students received "smoke free" bracelets as a reward for completing the surveys as well as to serve as a reminder to remain "smoke free".

Data from the pre and post survey was used to evaluate the student's knowledge and attitudes. The average pretest score was 70% the average posttest score was 90%. According to the surveys, there were no smokers in the class and all denied interest in starting to smoke and or the need for help quitting. A follow-up evaluation in 6 months will be important to demonstrate longer term effect.

As evidenced in their position statement on Global and Domestic Tobacco use, The Oncology Nursing Society is committed to nurses taking an active role in influencing tobacco control. Through a school-based community education program, nurses can make a difference by improving awareness, knowledge, and attitudes about avoidance of tobacco and health. This simple model could be used by individual oncology nurses, local ONS chapters, and community hospital health initiatives to affect teen smoking and long term health of their community.

## 195

**CREATING A MOBILE RESOURCE CENTER VAN PROGRAM FOR CANCER PREVENTION, EDUCATION AND SCREENING IN THE COMMUNITY.** Susan DeCristofaro, RN, MS, OCN®, Dana-Farber Cancer Institute, Boston, MA.

In Boston, the mortality rate for prostate cancer is 71.4% in blacks versus 27.5% in Caucasians. Massachusetts has the 10th highest incidence of melanoma in the nation. Studies reveal one in every five children develop skin cancer. Melanoma is common under age 30. Building strong relations with community partners allows the opportunity to provide prostate and skin cancer education and screening, improve disparities including lack of access, quality of health information, screening capacity and effective follow up. Our cancer center uses an innovative nurse-driven approach to cancer prevention and control: a mobile van. The van served 2,000 persons in its first year.

The purpose of the mobile van aims to contribute to early cancer detection as well as impact health disparities related to prostate and skin cancer. This effort targets vulnerable populations not receiving prevention intervention, especially the underserved. Education and screening interventions use the principles of the health belief model to influence cancer prevention behavior.

In collaboration with urban communities, the van provides early detection screenings and education at health fairs, faith-based organizations, community health centers, targeted neighborhoods, beaches and citywide



events. The van offers classroom and private exam space. The 39-foot van's friendly exterior presents a moving billboard welcoming effect. Staffed by physician, nurse, outreach coordinator, educator, patient navigator and clinical staff providing services at no cost to the public.

Outcome measures show improved access in underserved neighborhoods by persons seeking education and screening. In 2005, of 750 males educated, 311 received PSA screening with digital rectal exam. 52 (16 %) required patient navigator follow up. 1300 adults and children learned sun safe protective behavior. 134 adults received full body skin exams. 2 required follow-up. A need exists for lifeguard and elementary school education on sun protective behavior.

Oncology nurses must consider community partners as a way to improve access to early detection and build strategies to prevent cancer. A mobile van represents a model for nurses working in urban and rural settings, public health, education, economics and ethics. Information and collaboration on van design, program funding and the patient navigator role holds relevance for sharing with other nurses.

## 196

**IMPROVING OUTCOMES THROUGH PI INITIATIVES.** Mary Kelly, RN, MA, AOCN®, PCM-C, Robert Wood Johnson University Hospital, New Brunswick, NJ.

The multidisciplinary Oncology Performance Improvement (PI) team is comprised of an oncology medical director, the cancer liaison physician, nursing administration, hospital PI, nursing PI analysts, nutrition, pharmacy, and outcomes management. The four oncology units all have a staff nurse PI analyst; these nurses are responsible to review charts looking at specific indicators. Using PI as a vehicle to improve practice has proven very successful; chemotherapy order completeness and nursing documentation have seen the most dramatic improvement over the past three years.

There were several problems noted with chemotherapy orders and documentation, it was determined that these problems had the potential to lead to errors. The chemotherapy documentation and order forms were not always filled out completely, faxed orders were often lost or misplaced and it was not always clear which order was the original order. Due to the potentially significant impact these issues may have on patient care and outcomes it was decided to take immediate corrective action.

Interventions included: notifying all physicians that wrote chemotherapy orders that only completed orders would be filled by pharmacy; revisions of both the chemotherapy order form and nursing documentation form to make them more user-friendly and improve compliance with form completion; a fax machine was purchased as a dedicated "oncology patient orders only" fax; all faxed orders are stamped in red ink as "original". The chemotherapy policy was also revised to incorporate the new safety initiatives and changes in the ordering process, verification process and documentation.

As a result of all of these combined efforts, the PI team has seen a slow yet steady improvement in chemotherapy ordering and documentation. This improvement was evidenced by a decrease in the number of calls to physicians for order clarification and retrieval of new orders with a resulting improved timeliness of chemotherapy administration.

Successful implementation of the interventions can be credited to the work of the PI analysts and the oncology PI team who helped to drive the initiatives. Review of chart audits by the oncology PI team continues to be ongoing, with a focus on safety for both the patient and nurse.

## 197

**HAND HYGIENE: SUSTAINING OUR IMPROVEMENT.** Anna Liza Rodriguez, RN, BSN, Northwestern Memorial Hospital, Chicago, IL.

Most healthcare associated infection (HAI) results from cross-infection from the hands of staff. Hand decontamination with an alcohol hand rub or soap and water are the most effective ways of interrupting the chain of cross-infections. However, health care workers' compliance with handwashing remains poor. Oncology nurses care for severely immunocompromised patients. Improper hand hygiene techniques and poor compliance can predispose the neutropenic patient to develop potentially life-threatening infections and increase the patient's length of stay, cost per patient day, and cost per episode of care.

A project to improve hand hygiene (HH) compliance in a stem cell transplantation unit was initiated after an increase in horizontal VRE

(HVRE) transmission. Although significant decline in HVRE transmission and increased HH compliance were achieved, the challenge was sustaining these improvements consistently.

The purpose of the study was to eliminate the occurrence of HVRE transmission through sustained HH compliance in a stem cell transplant unit. The deliverables expected at the completion of the project included sustained compliance above 90% and development of best practice education and communication tools.

Improvement initiatives included:

- Increased signage around the unit
- Educational in-services
- HH information disseminated to nursing and house staff during orientation
- Patient and unit staff empowerment to challenge any HCW not observed decontaminating hands before and after patient contact.
- Communication to staff of project goals, results of direct HH compliance observations, and monthly HVRE transmission rates
- Key leadership and administrative support and involvement

The identified metrics for the study were HVRE transmission rates and hand hygiene compliance by discipline, room location, and time at room entry and exit.

Neutropenic patients are susceptible to life threatening infections. The occurrence of preventable infections negatively impacts a patient's length of stay, cost per patient day, and cost per episode of care. Oncology nurses must be vigilant of their own hand hygiene practices to ensure patient safety. Although neutropenia is expected for patients after chemotherapy, infection is not. Oncology nurses can make a significant impact in reducing or preventing nosocomial infections through thoughtful and consistent hand hygiene practices.

## 198

**FERTILITY RESOURCES FOR CANCER PATIENTS.** Bonny Mombrea, RN, OCN®, Roswell Park Cancer Institute, Buffalo, NY.

There are more than 9 million cancer survivors living in the US. Approximately 10% were diagnosed under the age of 45 and at risk for permanent infertility. Cancer treatments can damage ovarian and testes function, causing temporary or permanent infertility.

If a cancer patient wants to become a parent after treatment, many options await. This is such an exciting time in both cancer and fertility. Cancer Survival rates are high and, simultaneously, more reproductive technologies exist today than ever before.

To help find the reproductive resources needed in a timely, educational manner.

- Create guidelines how and when to inform patients about a potential loss of fertility.
- Provide educational tools to help patients and families make informed decisions about preserving fertility before treatment.
- Advocate for insurance coverage of fertility preservation treatment.
- Providing information about programs, which gives cancer patients free fertility medications and 50%-75% discounted rates on egg, embryo and sperm freezing at clinics nationwide.
- Provide directory of information about preservation techniques, parenthood options and support services available before, during and after cancer treatments. Though it may seem inhumane to deliver a cancer diagnosis and inform a patient that their treatment may leave them infertile, oncology professionals must address these ramifications immediately so that patients can access the full array of preservation options. Medical staff should discuss all of a patient's reproductive options without putting the onus on the patient to ask, and must not selectively share information.

As cancer patients gain knowledge of fertility preservation options, concerns such as access, cost and insurance coverage will move to the forefront of bioethical discussion. For now, patients deserve, and must demand full disclosure of their options upon diagnosis. The burden is on medical professionals to take the initiative tolerant about these technologies in order to provide holistic treatment not only of disease, but the entire person.

## 199

**OUTCOMES OF A FUNCTIONAL REVIEW AND PATIENT SATISFACTION SURVEY IN A RADIATION NURSING CLINIC.** Maureen McQuestion, RN,

BA, BSCN, CON(C), Barb Willson, RN, MSc, and Sandra Chapman, RN, CON(C), Princess Margaret Hospital, University Health Network, Toronto, Canada.

Patient satisfaction has been shown to be a nurse sensitive outcome as well as a measure of quality care provided by the multidisciplinary team (Spence Laschinger & Almost, 2003). In the ambulatory oncology setting at the Princess Margaret Hospital, care is provided in multiple settings including new patient clinics, treatment review clinics, radiation treatment units, and a radiation-nursing clinic (RNC). Existing patient satisfaction studies have focused on informational needs and information provision, satisfaction with physical and psychosocial adjustment, medical care, waiting times, technical competence of personnel, communication, access to care, and satisfaction with follow-up care, etc. (Frost, et. al., 1999; Goodwin, 2000; Gourdji, et. al., 2003; Hagedoorn, et. al., 2003). To date no studies have assessed patient satisfaction in an ambulatory radiation oncology nurse led clinic setting.

Following a functional review of the RNC and implementation of 7 recommendations, a patient satisfaction survey was conducted. The RNC provides a setting where patients can be assessed by a registered nurse for new or ongoing problems or have procedures carried out in the period between their weekly review appointments with the radiation oncologist and RN Case Manager.

42 patients who received care in the RNC completed the survey based on the Picker Institute's eight dimensions of patient centred care (PCC).

This presentation will outline the functional review of the RNC, discuss the implementation of the recommendations and share findings from the patient satisfaction survey.

Findings from the review and survey may serve as a model for the evaluation of care and patient satisfaction in other radiation treatment settings.

## 200

**MANAGEMENT OF PATIENTS UNDERGOING RADIATION FOR CANCER OF THE HEAD AND NECK.** Anne Shafitic, MSN, RN, NP-CAOCNP, Stephanie Bino, RN, OCN®, and Debbie Bessen, RD, Holy Name Hospital, Teaneck, NJ.

Radiation therapy for the treatment of head and neck cancer generally produces mucositis and xerostomia. The side effects generally become apparent approximately two weeks in the treatment course. These side effects place the patient at great risk of dehydration and malnutrition due to pain and dryness associated with swallowing. It is essential that nurses in the area of radiation oncology be proactive in maintaining hydration and nutrition in this group of patients.

Oral mucositis and xerostomia are a result of head and neck radiation. In order to increase compliance and adherence to oral hygiene, a protocol was developed in conjunction with the nursing staff and dietician. This protocol incorporates daily oral hygiene, complementary treatments and nutritional guidelines. The purpose of establishing this protocol was to administer the full course of radiation therapy without treatment breaks.

This program was developed to increase the ability of the patient receiving radiation therapy for head and neck cancer to maintain adequate hydration and nutrition despite the occurrence of mucositis and xerostomia. Prior to initiating therapy, patients receive a starter kit, which included items such as a water bottle, and sample mouth rinse. A session is also schedule to provide nutritional guidance on oral and enteral supplements. On a weekly basis, the patient was assessed by the nurse and dietician, which included weights, labs including a pre albumin and inspection of the oral cavity utilizing the RTOG grading scale.

Outcomes of the patients treated on the protocol were compared to those who were treated prior to the development of the protocol via a retrospective chart review. In comparing the two groups, statistically the patients who followed the protocol did better without breaks in treatment and maintained adequate hydration and nutrition despite mucositis and xerostomia.

It is imperative that radiation oncology nurses understand the side effects and assess the oral cavity during this time.

This protocol has now been adopted for use in all patients undergoing treatment for head and neck cancers. It is undoubtedly an area in which many other institutions can make a change for the betterment of patient care in the oncology community.

## 201

**PATIENTS WITH BREAST CANCER RECEIVING EXTERNAL BEAM RADIATION THERAPY: WHY DOES THEIR RISK OF RADIATION DERMATITIS VARY AND HOW IS IT EVALUATED?** Linda Carlin, RN, MSN, OCN®, CJW Medical Center, Richmond, VA.

Topic: Radiation therapy is one of the main treatment modalities for patients with breast cancer regardless of their stage of disease. The techniques used in treating patients with breast cancer who are receiving external beam radiation therapy are standardized with the reality that patients with breast cancer will get some degree of radiation dermatitis. However, all patients with breast cancer do not have the propensity for the same degree of radiation dermatitis and therefore, patients need to be treated differently.

Problem/Purpose: The purpose of this project was to evaluate the effectiveness of a tool to identify patients with breast cancer receiving external beam radiation therapy that are at increased risk for radiation dermatitis.

Interventions: Prior to initiating external beam radiation therapy treatment, each patient with breast cancer is evaluated using a combination Skin Toxicity Assessment Tool or STAT (Berthelet et. al, 2004), and the Oncology Nursing Society (ONS) Radiation Therapy Assessment Tool. All patients are monitored for skin reactions weekly using the same tool and given a specific score that is recommended for each criterion.

Interpretation/Evaluation: Patients are educated prior to treatment of their risk for radiation dermatitis. Risk is based upon their particular traits/treatment fields and baseline scores. Assessments are made at weekly intervals. Scores of 0-10, indicate that the patient is at minimal risk and basic moisturizing treatment will be initiated. Patient score of > 20, indicates that the creams will be changed to a prescription cream such as Biofine; a score of 20-30, indicates other measures such as the use of Intrasisite, Vaseline gauze etc. will be used and finally a score of 30-36, reflects the consideration of stopping treatment. The tool is kept in the front of the chart so the latest score is accessible to the nurse, physician and the therapist evaluating the patient.

Discussion: The degree of radiation dermatitis varies in patients receiving breast irradiation. It is necessary, therefore, for the radiation oncology nurse to quickly identify early radiation dermatitis and suggest treatments to help in minimizing furthering toxicity. The consistent use of this combined tool will allow the nurse to institute prompt interventions thus maximizing their impact.

## 202

**TOO HOT TO HANDLE? A COLLABORATIVE STUDY TO DETERMINE RADIATION EXPOSURE TO NURSING STAFF CARING FOR INPATIENTS UNDERGOING BEXXAR THERAPY.** Sheila Bruch, RN, OCN®, Adam Arndt, and Peter Jenkins, University of Utah, Salt Lake City, UT.

Radiation safety is a major consideration for nursing and support personnel when caring for patients who have received therapeutic doses of radioisotopes. In the summer of 2005, the University of Utah Hospital Bone Marrow Transplant Department (BMT) began using the radiolabeled murine monoclonal antibody (MAb) I-131 tositumomab (Bexxar) in combination with conventional chemotherapy conditioning regimens for patients diagnosed with relapsed non-Hodgkin's lymphoma. While Bexxar therapy is generally well tolerated enabling patients to be treated on an outpatient basis during this two week phase of their conditioning regimen, delayed toxicities related to immunologic response to foreign MAb mouse proteins may necessitate early admission to the BMT unit for supportive care. Since BMT nurses at our institution do not routinely care for patients receiving therapeutic doses of radioactive materials and our rooms are not shielded, nursing staff expressed concerns about potential environmental radiation contamination and high external exposure levels when caring for these patients on an inpatient basis.

The purpose of this project was to determine staff radiation exposure levels and environmental contamination associated with providing care for patients admitted less than 14 days after receiving therapeutic doses of Bexxar.

Radiological Health personnel surveyed a total of 3 inpatients and 2 rooms for environmental contamination and exposure rates associated with patient interaction over a period of 1 month utilizing a combination of meters, dosimeters and surface wipe analyses. Nursing staff were monitored for whole body exposure and for extremity dose using Luxel dosimeters and thermoluminescent dosimeters respectively.

Analysis of the survey data by Radiological Health Physicists showed urine to be the significant source of surface contamination by patients. Radiation exposure to nursing personnel was well below the federal maximum permissible dose level of 5,000 millirem/year.

Nursing staff who are well educated about the risks associated with radiolabeled MABs and who understand how evidence based safety precautions reduce their personal exposure and prevent contamination will be prepared to safely provide care for this patient population. This poster will display survey data and radiation precautions for working with inpatients who are receiving Bexxar therapy.

## 203

**DEVELOPMENT PROCESS AND EVALUATION OF A RADIATION THERAPY PATIENT EDUCATION TOOL.** Julie Earle, RN, BSN, RT (T), OCN®, and Mary Burk, RN, RT (T), Mayo Clinic, Rochester, MN.

A cancer diagnosis can be a frightening experience for patients and family. The prospect of receiving radiation can also be frightening, not knowing what to expect and trying to visualize the process on the basis of verbal information. Providing useful visual educational materials may help to reduce anxiety and provide information needed to be well prepared and informed. Anecdotal patient reports and observed anxiety in patients scheduled to have radiation treatment planning, especially those needing immobilization devices for head and neck, or brain radiation treatment, prompted a search of available resources. A minimal amount of information (either in print or video) on the procedure of simulation and construction of immobilization devices was found.

The purpose of developing the brochure is to provide useful information in a format that is easily understood. A follow up patient survey was developed and will be completed. The purpose is to gather information on the satisfaction of the patient on the timeliness and content of the booklet. The process of the development from inception to completion will be outlined in the poster as well as the evaluation of the patient satisfaction survey.

A convenience sample of 30 patients having completed simulation and in the first to second week of radiation treatments will be asked to complete the survey at the time of their nursing educational visit. Patients that have received the brochure would be asked to provide verbal consent to complete a brief, seven-item questionnaire. Questionnaires will be compiled and evaluated for trends and percentages on responses.

The goal of the survey is to provide insight into the completeness of or need for additional information, based on the trends and percentages of the answers provided by patients to the questions.

The process for development of the booklet provides oncology nurses information to assist in the development of patient education materials. The survey results provide a means to evaluate the effectiveness of the booklet in providing pertinent and timely patient information. Evaluation of the results will drive changes in the delivery or content of the information.

## 204

**FACULTY DEVELOPMENT: HELPING NEW GRADUATES CHOOSE ONCOLOGY.** Margaret Laccetti, PhD, RN, AOCN®, Boston College Wm. F. Connell School of Nursing, Boston, MA.

With the graying of the nursing force and nursing shortage potentially impacting the quality of patient care, it is imperative to identify new ways to recruit new graduate nurses to choose the oncology nursing specialty. Factors important in attracting new nurses to oncology may include the presence and presentation of cancer content across the curriculum, exposure to oncology nursing in clinical experience, and access to experienced oncology nurses practicing in a variety of roles.

The purpose of this project was to explore new ways for academic faculty members to interface with oncology practice at a major cancer center. This ten-week fellowship program facilitated opportunities for exposure to new and revolutionary nursing roles in oncology, cutting edge innovations in screening, diagnosis and treatment, and the nursing interventions current in caring for the oncology patients and families.

One faculty member from a baccalaureate program was recruited to participate in a ten-week summer fellowship. Given the expert status of this particular professor, activities focused on learning opportunities such as work in areas of oncology nursing she had little experience with, working with nurses functioning in expanded and innovative nursing

roles and with nurses caring for patients in new practice environments, including proton beam, and 'the operating room of the future'. Of particular importance was work with staff nurses to identify changes and additions to the baccalaureate curriculum, to prepare new nurses to begin a career in oncology.

Evaluation includes activities undertaken by this fellow to promote oncology nursing with students, including curriculum review and proposed changes, increased student clinical experience in oncology, and addition of content regarding innovative oncology nursing in a refresher program.

This fellowship facilitated multiple opportunities for faculty to provide current, relevant and exciting new information for students. Benefits of an experienced, doctorally prepared fellow are evident in nursing activities she promoted as part of the fellowship, including staff education and development of research and writing projects for staff. Increased interface between practicing oncology nurses and collegiate faculty has the potential to encourage new nurses to choose oncology, and to enhance patient care through education and research.

## 205

**TREAT ME RIGHT! RETENTION STRATEGIES GIVE ONCOLOGY STAFF COMMITMENT TO UNIT.** Christine Althoff, RN, MSN, OCN®, Inova Health Systems, Falls Church, VA.

Given the critical nursing shortage, Inova Fairfax Hospital (IFH) hematology-oncology unit is focusing on efforts to retain the current nursing staff. Beyond lower recruitment and orientation costs, retaining employees helps increase staff stability. Higher retention rates on the oncology unit fostered expanding current knowledge of experienced staff and growing that knowledge base at a faster pace. A review of business research provides an understanding of why employees stay and what people need to excel in stressful work environments such as inpatient oncology units. Most often cited is recognition and respect, career advancement opportunities, decreased workload and improved work relationships.

Retention strategies were developed to cultivate a sense of commitment to the oncology unit and provide opportunities for career growth.

The retention action plan focused on team building. Education opportunities focused on educating the experienced oncology nurse through in-services and in-depth stem cell transplant classes. ONS Chemotherapy Biotherapy Course and OCN® review course were offered as career advancement opportunities. Popular off-site retreats in a relaxed atmosphere allowed for interactive learning and forum to discuss the emotional impact of death and dying. Other retreat topics included: separate preceptor and charge nurse workshops, new grad day and clinical ladder workshops. In addition to lively discussions about process improvements, the retreats offered attendees informal time for relationship building with staff and the management team. Future topics will be determined from staff surveys. The shared governance team reinvigorated their meetings by moving offsite.

Methods to evaluate intervention included course evaluations and verbal feedback. Responses included enjoying the opportunity to discuss difficult issues such as challenging cases and the topic of death and dying in a relaxed format. Other responses included feeling more confident as a new graduate nurse, a preceptor and as a charge nurse. Management team felt the retreats contributed to a more cooperative spirit among staff. A retreat evaluation survey will be developed.

Patient satisfaction is linked to the capability of oncology nurses managing complex care issues proficiently and providing patients with education and support during the course of their disease.

## 206

**HIGH YIELD INVESTMENT: EDUCATION AND RETENTION OF ONCOLOGY NURSE TECHNICIANS.** Lenore Rees, RN, BSN, MBA, OCN®, and Terry Sylvanus, MSN, APRN-BC, AOCN®, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

The shortage of qualified professional nurses is an ongoing concern in oncology nursing, particularly in view of the anticipated needs of our aging population. As part of a health care team, Certified Nursing Assistants (CNAs) are often used as "nurse-extendors" to provide appropriate direct physical care to oncology patients. Continuing education intended to maintain and update CNA competencies or encourage additional skill acquisition is offered infrequently, and rarely addresses the special needs of oncology patients and families.



This abstract describes a series of educational programs offered for Oncology Technicians (CNAs with additional training and responsibilities in oncology care) who work at an NCI-Comprehensive Cancer Center (CCC). The inservice education programs were designed to provide basic information about cancer treatments and side effects, infections in neutropenic patients and care of patients receiving blood product transfusions. Oncology Technicians' response to the educational programs and the relationship of job satisfaction, performance and retention to education will be discussed.

The Oncology Technicians were initially offered an inservice program on care of oncology patients receiving blood products. After reviewing the program evaluations, additional programs were designed and implemented to meet the specific educational needs of the Oncology Technicians.

Oncology Technicians' response to these educational programs was overwhelmingly positive, ranking consistently above 4.5 on a 1 to 5 point Likert scale. While elsewhere in our facility, turnover of this category of personnel has increased to almost 20%, there has been no turnover among the Oncology Techs who were offered these programs. In addition, these inservice programs were subsequently made available to Oncology Technicians throughout the CCC, and program evaluations have remained highly favorable and enthusiastic. A needs assessment has been designed to help plan ongoing programs for 2006.

Improved patient care and better support for professional nurses are two of the benefits that can be anticipated after providing clinically relevant continuing education programs for Oncology Technicians. Similar programs focusing on the educational needs of CNAs could be implemented in other facilities to improve job skills, satisfaction and retention of these valuable members of the health care team.

## 207

**AN ONCOLOGY NURSE FELLOWSHIP AS A RECRUITMENT AND RETENTION STRATEGY.** Linda Miller, RN, MSN, OCN®, Georgetown University Hospital, Washington, DC.

The twin goals of recruitment and retention of oncology nurses continue to challenge educators and administrators. Successful orientation to the oncology setting requires the acquisition of considerable knowledge and skills. For the novice nurse, learning to care for acutely ill cancer patients with significant psychosocial needs can be a particularly stressful journey.

To facilitate the smooth transition of the new nurse, an oncology nurse fellowship was created. Ten weeks of varied, oncology-specific classroom activities supplemented the unit-based clinical preceptorship and general nursing and hospital orientations.

Using the OCN® curriculum as a basic blueprint, oncology nurse fellows moved from basic topics, including cancer biology and major treatment modalities, to review of specific malignancies. Particular attention was given to complications of cancer and its treatment, including pain, nausea and fatigue, and oncologic emergencies were discussed in detail. Bioethics, end-of-life issues and stress management were also introduced. Presentations were given by the course coordinator, guest lecturers from the institution who are resources for oncology nurses, and nurse experts from the community. Educational strategies varied and included traditional lecture format, classroom games (Pain Jeopardy, Who Wants to be a Mucositis Millionaire?), observations in clinical areas that interface with inpatient oncology (PET scan, infusion center) and rounding with advanced practice nurses (enterostomal therapist, palliative care nurse practitioner). Several speakers were members of the executive board of the local ONS chapter and stressed the value of ONS membership. Relevant journal articles were distributed and discussed. A light-hearted part of each classroom day, was "All Work and No Play . . .", when the group discussed opportunities for fun after work – hiking trails, museums, ethnic restaurants. Over the course of the program, the group bonded and developed into an informal support group.

Data collection is still in the early stages. The oncology nurse fellowship is a very effective tool for recruitment. Short term (two year) retention appears to have improved.

An intensive orientation commitment to novice nurses to ease the transition to oncology practice can provide dramatic benefits for the nurse, the institution and ultimately, the patient. With modification, the program should be applicable to any setting.

## 208

**RECRUITMENT OF MINORITY NURSES TO ONCOLOGY.** Linda Pellerin, RN, MSN, OCN®, Sharon Perryman, BSN, MHA, RN, Diane Hanley, MS, RN, C, Lynn Thompson, MPH, RN, OCN®, and Elizabeth Tracey, PhD, RN, AOCN®, Dana-Farber Cancer Institute, Boston, MA.

The nursing profession is expected to face an estimated 40% shortage of registered nurses by 2020 and there is likely to be a commensurate decrease in the number of oncology nurses. The population demographics are changing and becoming more diverse and this is currently not reflected in the nursing profession.

The S.M.a.R.T. Program (Support, Mentorship and Respect Together in Nursing) was developed as one step to address this national health problem. The goal is to increase the number of nurses from diverse backgrounds in our ambulatory oncology setting in order to provide culturally competent care to an increasingly diverse patient population and to address the current and future need for expert oncology nurses.

The Cancer Care Education Department developed an enhanced orientation program for minority, newly licensed registered nurses. The Chief Nursing Officer obtained financial support for this program, funding two positions above budget. The individualized orientation is 6 months to 1 year long and is combined with a mentorship program, which pairs the individual with a mentor from the same racial/ethnic background. The Clinical Nurse Specialist in Education guides the program, and the new nurse has a consistent preceptor in the clinical setting. The program provides comprehensive oncology content including all major oncologic disease entities, symptom and side effect management, research protocols, clinical rotation to various disease centers, and technical and psychosocial skills.

Feedback from the new nurses has been largely positive; the program allows them to develop gradual confidence and technical/behavioral skills in the care of these complex patients. The program also allows for flexibility in addressing the needs of the preceptor and the patient care area.

The pilot phase of this program is in its early stages. As we have seen over the year, the new hires have gained insight and continue to develop in the ambulatory oncology setting. Further evaluation is needed to determine the effectiveness of an extended orientation in combination with a mentor from the same social/ethnic background.

## 209

**EXPLORING BREAST CANCER SUPPORT IN MANAGED CARE.** Jennifer Wenzel, RN, Johns Hopkins University School of Nursing, Baltimore, MD.

Upon receiving a cancer diagnosis, patients are faced with the need to make complex treatment-related decisions that can lead to anxiety, fear and uncertainty. Managed care organizations' (MCO) emphasis on population-based approaches to illnesses along with interest in decreasing care and outcome variance and costs have created new social concerns and pressures. To date, the adequacy of cancer support services to meet patients' needs in MCOs has not been well described.

The purpose of this study was to examine patients' experiences related to cancer treatment in managed care. Sources and use of existing cancer support services were also explored.

A hermeneutic/phenomenological approach was used. This method relies on the belief that people make meaning from their lives through narrative construction.

Semi-structured interviews (n=21) with 14 MCO enrollees diagnosed with breast cancer were conducted during at least one of the following points: (1) diagnosis (2) treatment, and (3) post-treatment/follow-up. Participants had cancer requiring treatment, were > 18 years, were literate/articulate in English, and had been enrolled in their MCO > 1 year. Data analysis was accomplished through a reflexive process of transcript review, categorization and interpretation.

Women in this study perceived a lack of available support to help them successfully navigate the psychosocial and financial demands of pursuing cancer treatment in managed care. Although participants were, on the whole, highly educated and enrolled in less restrictive MCOs, they expressed difficulty, frustration and fatigue in managing the dissimilar and disconnected demands posed by the cancer and the MCO. Participants generally viewed existing support resources as incapable of meeting their specific needs during the cancer experience. Although all women discussed the need for support throughout the cancer experience, only one woman had accessed support group services during diagnosis, treat-

ment and early follow-up in spite of the fact that most of the participants acknowledged the presence of such groups.

Study findings may serve as a basis for policy and practice changes to decrease the distress of this realized patient burden. Cancer support resources need to be examined and restructured to provide the assistance patients require when accessing health care services in an increasingly complex environment.

## 210

**PREVENTION OF MUCOSITIS IN AUTO BMT/STEM CELL TRANSPLANT PATIENTS.** Joan Klocke, RN, OCN®, North Shore University Hospital, New York, NY; and Maureen Cannon, RN, NP, Diane Gissinger, RN, MSN, Ruthee Bayer, MD, Craig Devoe, MD, and Veena John, MD, North Shore University Hospital, Manhasset, NY.

It is estimated that 80 percent of patients who undergo high-dose chemotherapy prior to transplantation develop mucositis. Mucositis is a painful complication, which can lead to poor nutrition, increased use of narcotics, dehydration, greater risk for infection and bacteremia and altered quality of life. Patients can have oral ulceration, epigastric discomfort, diarrhea, rectal irritation and bleeding. It is likely that the complications of mucositis can contribute to increased length of stay during stem cell transplantation.

The purpose of this study is to compare patients who received Kepivance® (palifermin) with patients that did not receive this medication regimen during autologous stem cell transplantation. We performed a retrospective analysis of 40 patients; 20 prior to the institution of Kepivance® (palifermin), and 20 patients after. The objective of this study was to determine whether the use of Kepivance decreases the incidence and duration of mucositis.

A retrospective comparison study is appropriate for this research.

Data for this study was taken from forty discharged inpatient medical records. No patient identifiers were used, instead a number for each group from 1 to 20 was given. The data collection tool was approved by the Institutional Review Board. A descriptive statistical analysis was performed by an independent statistician. The data points extracted were the following: diagnosis, length of stay, oral mucositis, GI mucositis, narcotics, TPN, antifungals, antidiarrheals and antibiotic use.

The findings of this study support the clinical decision to include Kepivance® (palifermin) in the preventive treatment for mucositis in Autologous BMT/Stem Cell Transplant Patients. The average length of stay for non-Kepivance patients was 32.3 days compared to 28.3 days in patients who received the drug. The severity of both oral and GI mucositis appeared to be less. 17 out of 20 non-Kepivance patients experienced diarrhea or rectal irritation versus 9 out of 20 with Kepivance. There was a trend toward earlier engraftment in the Kepivance group.

This pilot study suggests an improvement in mucositis symptoms with the use of Kepivance® (palifermin). It appears that mucositis and its treatment contribute to the length of stay and costs of stem cell transplantation. Quality of life for these patients can be greatly improved if mucositis is eliminated or reduced during the course of stem cell transplantation.

## 211

**THE EXPERIENCE OF LIVING WITH A SPOUSE WITH PROSTATE CANCER.** Margaret Laccetti, PhD, RN, AOCN®, Boston College Wm. F. Connell School of Nursing, Chestnut Hill, MA.

Prostate cancer is the most commonly diagnosed cancer in American men, with 232,090 new cases to be diagnosed in 2005. Although much research has addressed patient and couple/dyad issues, including a variety of psychosocial interventions aimed at promoting quality of life, coping, social support, and self esteem, and managing symptoms, little has been done identifying problems and interventions for the partners of these patients.

The purpose of this pilot study is to explore the experiences of women living with a spouse with prostate cancer, identifying themes and common experiences delineating concerns or problems amenable to intervention. The planned trajectory of this research is to use qualitative methods to determine, define and explore these experiences, to develop tools to more efficiently examine them in larger samples, enabling identification of common problems potentially responsive to intervention, with a final research goal of developing and testing intervention techniques.

This study, based in Heideggarian phenomenology, will utilize the pure description of the participants, the structure and content of encounters, to identify unifying themes and experiences that may indicate potentials for nursing intervention.

Eight participants, all spouses of men with prostate cancer, will be identified through advertising or solicitation in the community or at support group meetings. Data collection should conclude in March '06. Two participants will be randomly assigned to each of four data collection categories: expressive writing, directed expression, structured interview and non-structured interview. Participants in the expressive writing and directed expression groups will use Pennebaker's disclosure model of writing or speaking. All interviews will be conducted by the principal investigator.

All data will be transcribed to computer text for review by the principal investigator to identify common thematic experiences and problems.

Findings initially support common and specific themes, including issues with inconsistent information, decision making, 'it's not my body', and the ambivalence of a living with a cancer diagnosis. This information indicates opportunities for nursing interventions such as providing information, counseling, coaching and anxiety reduction.

## 212

**BELIEFS AND ATTITUDES ABOUT PROSTATE CANCER AND PROSTATE CANCER SCREENING PRACTICES AMONG RURAL AFRICAN AMERICAN MEN.** Joann Oliver, RN, MSN, PhD(c), University of Alabama, Tuscaloosa, AL; and Cecelia Grindel, PhD, Georgia State University, Atlanta, GA.

African American men are diagnosed with prostate cancer almost twice as frequently as Caucasian men and more than twice as likely to die from it. This disparity is especially marked among African American men in rural areas who either lack access to, or fail to obtain, prostate cancer screening for early detection and treatment. Understanding the reasons for this disparity is essential if it is to be remedied.

The purpose of this qualitative study was to describe personal attitudes and beliefs of rural African American men toward prostate cancer and prostate cancer screening. The purpose directly relates to ONS research priorities of screening and early detection and patient education of cancer.

A convenience sample of nine rural African American men from West Central Alabama, between the ages of 43 to 72 was interviewed using a semi-structured method. The questions were based on literature found concerning prostate cancer and African American men. The interview guide and demographic form were pilot tested. The interviews lasted approximately 1 hour and were audiotaped for accuracy. Data were transcribed verbatim and analyzed using content analysis for themes and subcategories.

Disparities in health are exaggerated in vulnerable rural populations. Little is known about the prostate cancer beliefs of African American men dwelling in rural areas. A greater understanding of their personal experiences, beliefs and perception about prostate cancer and prostate cancer screening can be influential in providing better guidance to health care providers in adapting educational materials, activities and interventions related to prostate cancer and prostate cancer screening. Six themes were identified: Disparity (a feeling of impersonal interactions with health care providers), Lack of knowledge (about prostate cancer and prostate cancer screening), Traditions (lack of value related to preventive care), Fear (not knowing what to expect), Mistrust in the System (Mistrust of health care providers and the health care system), Threat to Manhood (sexual and linking the screening exam to being violated). Three categories (tradition, mistrust, and threat to manhood) were especially related to rural or African American culture. The results support the general significance of understanding the views of the target population and specifically its culture and offer opportunities for adapting health promotion to the population.

## 213

**PERCEIVED BARRIERS TO BREAST CANCER SCREENING: A COMPARISON OF AFRICAN AMERICAN AND CAUCASIAN WOMEN.** Natalie Bastien, ARNP, MS, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

Although the incidence of breast cancer is high among Caucasian women, African American women continue to experience higher breast cancer mortality and lower survival rates in comparison to Caucasian

women of the same age and cancer stage. Research regarding breast cancer screening among ethnic minority women from lower socioeconomic groups is extensive, but there is a lack of research that investigates barriers to breast cancer screening among African American women of higher socioeconomic status.

The purpose of this study was to compare health beliefs of African American and Caucasian women regarding perceived barriers to breast cancer screening.

The study was conducted at two local community churches located in Tampa, Florida. The barriers subscale from the Health Belief scale was used for data collection. Descriptive statistics were used to analyze demographic data, and independent t-tests were used to compare the two groups in their perceived barriers.

Results revealed that both groups perceived barriers to breast cancer screening, there were more similarities than differences. However, African American women were significantly more likely to indicate that having a mammogram would make them worry about breast cancer ( $p = 0.39$ ).

Although previous research has shown differences between African American and Caucasian women, this study did not support those results. The two groups of women were similar in age education and marital status and all were active in their churches. Perhaps these similarities led to the lack of differences in perceived barriers scores between the two groups. This finding lends support to the idea that socioeconomic status more than race leads to disparities in breast cancer screening.

## 214

**THERAPEUTIC ADMINISTRATION OF ORANGE TO RELIEVE DMSO-RELATED SYMPTOMS DURING AUTOLOGOUS PERIPHERAL BLOOD STEM CELL REINFUSIONS.** Seth Eisenberg, RN, ADN, OCN®, Seattle Cancer Care Alliance, Seattle, WA; and Pamela Potter, ARNP, DNSc, University of Washington, Seattle, WA.

DMSO is commonly used as a preservative for autologous hematopoietic stem cells. During reinfusion, patients frequently experience throat discomfort, coughing and nausea or vomiting. Anecdotal experience suggests that using an orange to smell or taste during the reinfusion may alleviate symptoms in some patients. Literature reviews failed to produce any studies on the potential efficacy of orange for this application.

While limited in duration, symptoms associated with autologous reinfusions can cause significant patient distress. Coughing and choking increases anxiety that is often heightened during this time-point in the transplant continuum. No specific medical interventions have reported efficacy for these symptoms, despite the administration of antiemetics and other premedications.

In the same way that menthol cough drops stimulate the oral-nasal receptors to reduce symptoms of sinus congestion, it is postulated that orange or orange vapors might have a similar effect on the throat and oral-nasal cavity. Anecdotal reports suggest orange aroma may compete with the pungent odor of DMSO as it is exhaled, although this mechanism of action has not been proven.

This is a pilot study of 60 patients receiving an autologous reinfusion in the SCCA Ambulatory clinic. Participants are randomized to one of three arms: Orange Intervention (OI), Orange Aromatherapy (OAI), or control (deep breathing). Control groups who receive more than three bags of cells are then crossed over to receive either the OI or OAI. All subjects are monitored for up to six bags of cells. At the completion of each bag, patients are asked to rate their degree (0-10) of throat "tickling" or discomfort, nausea, retching and urge to cough. All responses are documented using a laptop computer.

This pilot study is currently in progress, with 25 of 60 patients accrued thus far. At completion, data will be analyzed to determine if either intervention is beneficial for reducing DMSO-related symptoms, and if one intervention is superior. This will be the first study with empiric evidence to support or disprove the use of oranges for ameliorating a significant discomfort associated with autologous reinfusions. These results may provide the foundation for further research in this area.

Funding Sources: Puget Sound Oncology Nursing Society

## 215

**A RANDOMIZED, PLACEBO-CONTROLLED STUDY OF FENTANYL EFFERVESCENT BUCCAL TABLETS FOR BREAKTHROUGH PAIN IN OPIOID-TOLERANT PATIENTS WITH CANCER.** Lorraine Manco, RN, Beth Israel Medical

Center, New York, NY; John Messina, PharmD, Cephalon Inc., Frazer, PA; and Russell Portenoy, MD, Beth Israel Medical Center, New York, NY.

Cancer-related breakthrough pain (BTP) can significantly affect quality of life and functional status and typically is managed with a short-acting oral opioid, taken as needed, to supplement an around-the-clock opioid regimen. Since episodes of BTP occur unpredictably and peak rapidly, there is benefit in providing faster pain relief. Fentanyl effervescent buccal tablets (FEBT) are designed to enhance the rate and efficiency of fentanyl absorption through the buccal mucosa. They may provide rapid-onset analgesia.

This study evaluated FEBT in opioid-tolerant patients with cancer-related BTP.

Breakthrough pain may be unpredictable and of severe or excruciating intensity and requires an analgesic with a rapid onset of action.

Patients receiving 60 morphine equivalent mg/day as baseline medication for chronic cancer-related pain and experiencing 1-4 episodes of BTP daily were enrolled in this double-blind, randomized, placebo-controlled study. After open-label titration, patients were randomized to predefined 10-tablet sequences (7 FEBT, 3 placebo) to assess FEBT efficacy versus placebo. Pain intensity (PI) and pain relief (PR) were recorded at 15, 30, 45, and 60 minutes; pain intensity differences (PID) and total pain relief (TOTPAR) were calculated; SPID at 30 minutes (SPID30) was the primary efficacy variable. Adverse events and supplemental medication use were recorded.

Eighty of 123 enrolled patients (65%) identified an effective FEBT dose during titration (100 µg to 800 µg), 77 continued in the double-blind phase, and 72 were efficacy-evaluable. The SPID30 was  $3.0 \pm 0.12$  (mean  $\pm$  SE) for patients receiving FEBT versus  $1.8 \pm 0.18$  for those receiving placebo ( $P < .0001$ ). The mean PID, PR, SPID, and TOTPAR scores at each time point were significantly better for patients receiving FEBT than for those receiving placebo ( $P < .003$  at 15 minutes;  $P \leq .0001$  for later time points). Patients were twice as likely to require supplemental medications for episodes of BTP for which placebo was used. The most commonly reported adverse events (nausea, 22%; dizziness, 22%; headache, 15%; fatigue, 12%; vomiting, 11%) were mild or moderate in severity. Two patients discontinued because of oral tolerability issues.

This study provides evidence that FEBT are well tolerated and effective for the treatment of BTP associated with cancer.

Funding Sources: Cephalon Inc., Frazer, PA

## 216

**A STUDY ON THE FEASIBILITY OF HAVING NURSES EVALUATE PATIENTS FOR CHEMOTHERAPY-INDUCED NEUTROPENIA USING A RISK ASSESSMENT TOOL.** Kelley Moore, RN, and Barry Fortner, PhD, Supportive Oncology Services, Memphis, TN.

Chemotherapy-induced neutropenia (CIN) may result in febrile neutropenia and other complications. A risk assessment tool was developed to help clinicians evaluate patients' risk for developing CIN.

To conduct a pilot study that evaluates the feasibility of nurses implementing this risk assessment tool into clinical practice.

Nurses in 15 community oncology practices used the tool to evaluate patients' risk of developing CIN before they started chemotherapy treatment. Nurses completed an evaluation form each time he or she used the risk assessment tool, for a total of 10 evaluation forms in each practice. The nurses then completed a survey that assessed their perceptions of the tool's utility.

The nurses, who had an average of 6 years of oncology experience, successfully used the tool in all of the patients. The nurses evaluated each patient for the presence of 14 independent risk factors as well as the chemotherapy risk factor (a regimen associated with a moderate to high risk of neutropenic complications). The most frequently identified risk factors were chemotherapy (55%) and advanced cancer (31%). Nurses reported that the tool helped to "identify neutropenia risk" in 69% of the patients and to "determine the degree or severity of neutropenia risk" in 57% of the patients. Nurses reported initiating an action as a result of the tool in 141 (94%) patients. The actions most frequently reported were "closer monitoring for neutropenia" (64%) and "use of prophylactic G-CSF" (27%). Five (33%) nurses reported that their practices planned to adopt the tool into routine clinical practice, while another 6 (40%) planned to begin systematically assessing patients for the risk of CIN using some other method.



Clinical risk assessment tools can quickly and effectively assist oncology nurses in the evaluation of patients for risk factors of CIN. These tools may assist in the identification of patients who would benefit from intervention intended to prevent or decrease the severity of CIN and its complications.

## 217

**EARLY COLLABORATION BETWEEN ONCOLOGY CLINICAL RESEARCH NURSES AND SPONSORS IS VITAL TO THE SUCCESSFUL DEVELOPMENT AND IMPLEMENTATION OF INDUSTRY-SPONSORED CLINICAL TRIALS.** Vivian Sheidler, RN, MS, Moses Cone Regional Cancer Center, Greensboro, NC; Kelly Tschannen, RN, BSN, OCN®, St. Louis Cancer and Breast Institute, St. Louis, MO; and Donna Truscinski, Amgen, Inc., Thousand Oaks, CA.

Oncology nurses at clinical sites play a key role in the implementation of industry-sponsored trials. Protocols are generally developed by in-house sponsor personnel, with guidance from academic centers for the scientific rationale and design. However, feedback on the practicality of implementing the trial is not usually solicited from clinical team members such as oncology nurses. This may result in an unnecessary burden on patients and personnel, which may lead to lower patient accrual rates, suboptimal protocol adherence, and challenges with data collection.

To discuss the benefits of early collaboration with nurses in developing study materials and implementing clinical trial protocols.

The FIRST Study, an industry-sponsored trial in community practices studying the use of pegfilgrastim starting in the first cycle of myelosuppressive chemotherapy, accepted an offer by an oncology nurse manager to review the protocol and case report form (CRF). Based on her suggestions, the CRF was simplified to reduce paperwork and minimize unnecessary data collection. The CRF instructions were also modified to provide clearer and more relevant direction on how to complete the CRF.

The feedback from this nurse contributed to the successful and accurate retrieval of trial data. Because the CRF was simplified and additional guidance was provided, paperwork was completed accurately and submitted promptly. In addition, staff at the clinical sites received clearer directions on the process, which was demonstrated by fewer queries to the call center.

Clinical trial protocols should be designed using a team approach, as each member of the research team is integral to the success of the trials. Early collaboration with oncology nurses can improve the quality of the trial, ease the trial process for site staff, and potentially minimize common problems such as low accrual rates. Oncology nurses can also help sponsors identify requirements for site participation (e.g., access to equipment). Highlighting these requirements may help the sponsor select appropriate clinical sites and encourage the clinical sites to participate in the clinical study. The contribution of the oncology nurses is, therefore, valuable to the successful implementation of clinical trials.

## 218

**CLINICAL TRIAL FLOW DIAGRAMS: A "SNAP-SHOT" APPROACH TO CLINICAL TRIALS.** Pam Carney, RN, BSN, OCN®, Teresa Knoop, MSN, RN, AOCN®, Gloria Cherry, RN, BS, James Whitlock, MD, and Anna Belle Leiserson, AMLS, Vanderbilt Ingram Cancer Center, Nashville, TN.

Less than 3% of adult cancer patients enroll in clinical trials. However, it is estimated that 12%-44% would be eligible to participate. Many barriers to clinical trial participation have been identified including lack of information or misinformation about access and eligibility. The oncology nurse plays a pivotal role in clinical trial recruitment and enrollment. Regardless of the clinical setting, oncology nurses should be knowledgeable about the availability of research based cancer treatment and must have access to reliable and current clinical trial information.

At this NCI-designated comprehensive cancer center approximately two hundred clinical trials are enrolling at any given time. It is challenging for the research teams to keep the nurses current on the ever changing enrollment status and eligibility criteria for each trial. A project was initiated to design a tool to enable the nurse to quickly identify trial availability, prioritization and accrual status. At this NCI-designated comprehensive cancer center approximately two hundred clinical trials are enrolling at any given time. It is challenging for the research teams to keep the nurses current on the ever changing enrollment status and eligibility criteria for each trial. A project was initiated to design a tool to enable the nurse to quickly identify trial availability, prioritization and accrual status.

Flow diagrams were developed for each type of cancer for which clinical trials were available. The layout utilizes a tree format with "branches" for prevention/detection, resectability, stage, prior treatment and other site appropriate criteria. The title of the clinical trial appears in a box that is color coded to identify accrual status: open, pending or on hold. To enhance access, the flow diagrams are on the cancer center web site and are updated regularly to reflect the current status. Web access allows viewing of trial summaries and eligibility criteria.

The flow diagrams provide the oncology nurse with a "snap shot" of site-specific clinical trials. Nurses and physicians can view the diagrams in patient care areas on the cancer center intranet thereby gaining access to current and reliable clinical trial information. Data demonstrates that the flow diagrams are in the top twenty most frequently visited areas on this center's web site.

The flow diagrams have become an invaluable internal tool for oncology nurses and the healthcare team to promote clinical trial enrollment. Additionally, physicians and nurses in community based practice can view the site-specific flow diagrams on the cancer center website and quickly determine if there are experimental treatment options available for their patients.

## 219

**ONCOLOGY RESEARCH NURSES: A VALUABLE RESOURCE FOR COMMUNITY EDUCATION.** Darryl Somayaji, MSN, RN, CCRC, Roswell Park Cancer Institute, Buffalo, NY.

Accrual to oncology clinical trial continues to be a challenging national goal. According to the Nation Cancer Institute (NCI), less than 5 percent of adults diagnosed with cancer each year will seek treatment as a participant in a clinical trial. Providing opportunities through clinical trial community education encourages important dialog between healthcare provider and potential research study participant.

The purpose of the project is to educate the community about clinical trials utilizing skills and expertise of oncology research nurses of an NCI comprehensive cancer center (CCC). The plan is to enhance accrual to oncology research studies by tapping into those valuable resources. Research in the CCC is arranged in clinical programs (e.g. genitourinary cancer). The research nurse is an essential member of the clinical and research team assigned to a clinical program.

Research nurses are available to present information about clinical trials related to specific clinical programs in the community settings. These presentations include: Western New York Chapter Oncology Nursing Society Education Conference, CCC Network affiliations, presentations in conjunction with pharmaceutical sponsors, local cancer support groups, and community health fairs. Future plans include exchange of clinical trial information with CCC international affiliations. Information regarding prevention, testing, screening, treatment, patient care costs, patient's rights and responsibilities, research outcomes, and cancer education resources associated with specific clinical trials are included in the community presentation.

Accrual for each clinical program and CCC clinical network site is assessed quarterly identifying the percent of accrual increase or decrease in each clinical program. Interest in clinical trials generated at community presentations will be monitored by the ASK CCC call center, ASK CCC web site and activity on the clinical trial area of the external web page of the CCC.

Oncology research nurses understanding of the clinical trial process, and established knowledge base of clinical trials in disease specific areas, provides the opportunity for potential participants in a clinical trial to make informed decisions for cancer care including participating in a clinical trial. Increasing accrual to clinical trials will assist researchers in answering significant questions that will lead to healthier prevention practices and improved treatment for cancer.

## 220

**NURSING INPUT INTO CLINICAL TRIALS: THE KEY TO SUCCESS.** Donna Gerber, PhD, RN, AOCN®, and Michelle Rohlf, RN, FNP, University of Texas M.D. Anderson Cancer Center, Houston, TX.

The days of a clinical trial consisting of treatment and measuring response are no longer making the grade. With the new-targeted therapies, clinical trials are complex with collection of tissue and blood specimens at specific points and careful monitoring of patients during the administration

of these new agents. The protocols are written without considering how the research nurse/staff will achieve all the nursing procedures and/or collection of specimens. Only after Institutional Review Board (IRB) approval do investigators (PIs) discover that many problems exist in the clinical trial regarding the ability to execute the protocol as written secondary to nursing workload and other logistics. Then the clinical trial is delayed as revisions and resubmissions to the IRB are done.

The need to educate nurses especially research nurses to be involved in planning of clinical trials enabling them to identify problems prior to the study being approved by an IRB is critical. At present most clinical trials are approved and then the research nurse must deal with the trial as written or the investigator has to revise the protocol thus delaying the clinical trial.

A structured review by nurses of clinical trials prior to IRB is needed. At M. D. Anderson when a protocol is submitted, it is sent to six peer reviewers one being a nurse. The nurse reviews the protocol for nursing problems and responds to the PI regarding problems that are identified and/or clarifications that are needed to implement the trial successfully.

The review is sent to the PI who must address each point before the protocol can go to the IRB. The reviewer must state that they agree with the responses by the PI.

When PIs or drug companies write a protocol their focus is how to achieve the answers to the research questions/objectives. The protocols are written without considering how the research nurse/staff will achieve all the nursing procedures and/or collection of specimens. This leads to violations, deviations, and frustration for the PIs, nurses, and clients, which could be minimized if nurses are part of the planning team.

## 221

**CUSTOMER SATISFACTION SURVEY TOOL FOR CANCER CLINICAL TRIAL PATIENTS.** Camille Servodido, RN, MPH, CRNO, OCN®, CCRP, Edith Clark, RN, OCN®, CCRP, and Rhea DeBari, RN, MSN, CCRP, Hartford Hospital, Hartford, CT; Barbara Deckers, RN, retired, Hartford, CT; and Lisa Allen, PhD, Hartford Hospital, Hartford, CT.

The Cancer Clinical Research Office nursing team noticed that the Press Ganey patient satisfaction surveys used at Hartford Hospital did not include questions for patients interested in cancer clinical research trials. There was no mechanism in place to evaluate patient satisfaction with the informed consent teaching session.

The research nursing team desired feedback from cancer clinical trial patients regarding customer service and educational information presented at the time of the informed consent review.

The research nurses worked with the Director of Outcomes Measurement to develop a customer survey tool designed as a post card. The survey tool was comprised of ten questions. Patients were asked about convenience of their appointment, staff courtesy, respect for privacy, explanation of what to expect during a clinical trial, explanation of side effects, completeness of information presented, ability of the research nurse to answer questions, and whether or not the patient chose to participate in a clinical trial. A five point Likert scale was used for responses ranging from very poor to excellent. In 2005, the customer satisfaction surveys were given to any potential research trial patient at the time of the informed consent session with a cancer clinical trial research nurse.

Thirty-six customer satisfaction surveys were returned. 30 to 34 (83.3% to 94.4%) patients responded with ratings of "excellent", while 2 to 6 (5.6% to 16.7%) patients responded with ratings of "good" for each question on the survey. No fair, poor, or very poor responses were noted. The patients rated questions related to concern for privacy and ability of research nurse to answer questions as highest. The patients rated explanation of side effects and completeness of information (16.7%) as lowest. 31 patients (91.2%) enrolled in a clinical trial while 3 patients (8.8%) did not.

This was a successful attempt to gain feedback for informed consent sessions. Surveys will continue to be distributed in 2006. The team is developing a research project to further investigate how improvements on the explanation of side effects during informed consent review can occur with potential clinical trial patients.

## 222

**ENHANCING CLINICAL TRIALS EDUCATION FOLLOWING EVALUATION OF ONGOING PROGRAMS.** Linda Krebs, RN, PhD, AOCN®, University of

Colorado School of Nursing, Denver, CO; Linda Burhansstipanov, MSPH, DrPH, Native American Cancer Research, Pine, CO; Eduard Gamito, BS, University of Colorado at Denver and Health Sciences Center, Denver, CO; and Alice Bradley, MA, National Cancer Institute's Cancer Information Service, Rocky Mountain, Colorado Springs, CO.

Participation in cancer clinical trials (CCTs) is estimated at 4%-5% of those eligible to participate. Current participants tend to be white, male and highly educated. Women, minorities and the medically underserved have lower rates of participation. Increasing CCT participation can potentially impact cancer treatment outcomes as well as overall survival and quality of life for those with cancer.

The purpose of this presentation is to describe how the outcomes of two CCT education programs enhanced the implementation of the CCT component of a web-based cancer survivorship education program for Native Americans.

Two CCT education programs were developed and implemented over the past five years. One program was designed to educate healthcare providers about CCTs while the second was designed to aid Native Americans in informed decision making about CCT participation. The third program, currently being implemented, is designed to enhance cancer survivorship for Native Americans and others through an interactive web-based education program. Each program uses a modular format to provide information on CCTs. The first two include didactic and interactive components provided in a seminar format; the third is a modular component of a larger educational intervention.

Initial evaluation of the CCT education programs used paper/pencil surveys for demographics, pre/post-test knowledge and general satisfaction. In 2002, evaluation began with an audience response system (ARS) that allowed for general data collection as well as assessment of knowledge, attitudes and beliefs through the ARS polling functions.

In addition to increasing knowledge about CCTs for healthcare professionals and Native Americans who participated in the curricula, evaluation allowed the project team to better understand the attitudes and beliefs about CCT participation of these populations. This information has been used to develop the CCT component for those taking part in the interactive web-based cancer survivorship/quality of life program. The educational materials from the two CCT curricula are available through the Web for use in education programs and the web-based program can be reviewed by any healthcare provider. Having previously evaluated and readily available CCT information can facilitate the oncology nurse's ability to educate patients, families and the public about CCTs and hopefully increase appropriate participation.

## 223

**LIVE ITEM TECHNIQUE (LIITE) IN LONGITUDINAL QUALITY OF LIFE CANCER TRIALS.** Patrick McNees, PhD, Applied Health Science, Inc., Orlando, FL; and Karen Hassey-Dow, PhD, RN, FAAN, and Victoria Wochna-Loerzel, MSN, RN, AOCN®, University of Central Florida, Orlando, FL.

Quality of Life (QoL) research remains a vital investigative area for cancer researchers and is the highest ranked priority among the general ONS membership. Multiple QoL instruments are often used in longitudinal clinical trials. Unfortunately, such instruments frequently include specific items that are insensitive measures for proposed interventions or target populations. Resulting data may contribute to difficulties in detecting effects and patterns that are clinically important and otherwise statistically significant.

An alternative technique (LIITE) that identifies highly sensitive items among instruments is presented. The research question was: does the utilization of the LIITE technique result in the detection of significant effects compared to situations where utilization of all data does not detect such effects.

Chaos theory provides the theoretical underpinnings for identifying salient data element patterns.

LIITE was developed and tested in a two-group Breast Cancer Education Intervention QoL trial (n=255). Instruments included the Brief Pain Inventory, Profile of Mood States and QoL-Cancer Survivors; totaling 98 items. We calculated and summed absolute change scores and determined item rankings. Thirty-six items common to both Experimental (EG) and Wait Control (WC) groups accounted for 50% of total change. Twelve items contributed to 50% of the variance for either EG or WC. When combined, the total number of items increased to 48 and raised the

percentage of variance accounted for to 63%. Between and within group analyses were performed at 3 and 6 months follow-up using the full data set and LIITE scores.

At 3 months follow up, the results were equivocal regardless of which data set was analyzed. However, at 6 months LIITE identified continued improvement in the EG that would have been obscured if the full data set was used. Additionally, LIITE detected significant change in the WC after receiving the intervention at month 6 that was undetected when all items were included.

LIITE may have utility in increasing data sensitivity in longitudinal QoL cancer trials. If future research confirms the efficacy of LIITE, smaller sample sizes may be indicated. LIITE may also be an important tool for efficient data mining in broad data sets, thus facilitating oncology human intervention research.

## 224

**THE BREAST CANCER TREATMENT RESPONSE INVENTORY.** Frances Cartwright, RN, PhD, AOCN®, the Valley Hospital, Paramus, NJ; Carol N. Hoskins, PhD, RN, FAAN, College of Nursing, New York University, New York, NY; and Wendy C. Budin, PhD, RN, BC, College of Nursing, Seton Hall University, South Orange, NY.

There is a need for an instrument that conceptualizes and operationalizes the three dimensions of the breast cancer symptom experience: number of symptoms (NOS), severity of symptoms (SOS), and amount of distress experienced (ADE), so that interventions can be toward specific concerns that women report throughout the diagnostic, treatment, recovery and ongoing recovery.

To describe development and psychometric properties of the Breast Cancer Treatment Response Inventory (BCTRI) (Hoskins, 1990; Budin and Hoskins, 2000; Cartwright-Alcarese, 2005), an instrument designed to measure symptom experience from treatment through ongoing recovery.

Components of Stress and Coping Theory (Lazarus & Folkman, 1984) and the Symptom Experience Model (Dodd, et al., 2001) provided a framework for symptom experience that incorporates three interacting dimensions: NOS, SOS, and ADE.

The BCTRI, a Likert-type self-report instrument lists symptoms common from treatment through ongoing recovery, and provides scores for NOS, SOS and ADE. Descriptive, correlational, and factor analysis were used to establish psychometric properties of the BCTRI. Validity for side effects on the BCTRI was supported through a literature review and verified by a CNS and a statistician. Principal components factor analysis supported a 5-factor solution accounting for 68% of the variance. Using the BCTRI, a descriptive, survey design was used to collect data from 105 women at three phases of treatment, i.e., post-surgical, adjuvant therapy, and ongoing recovery (Budin & Hoskins, 2000), and was used to examine symptom experience of 131 women in early and ongoing recovery (Cartwright-Alcarese, 2005). Participants for both of these studies were selected from practices of physicians in the NY/NJ Metropolitan area. Reliability for the three dimensions of symptom experience was evident in Cronbach alpha coefficients of .64, .77, and .72, and .72, .82, and .84 respectively.

The BCTRI demonstrated strong psychometric properties in testing among women with breast cancer. Providing resources to address breast cancer survivors' symptom experience and related distress is a research priority. The BCTRI is an essential tool to examine breast cancer survivors' symptom experience, as well as the interaction between NOS, SOS, and ADE, so that nursing interventions will be aimed at the source of distress.

## 225

**THE PSYCHOMETRIC PROPERTIES OF THE ICELANDIC VERSION OF THE MD ANDERSON SYMPTOM INVENTORY (MDASI).** Sigríður Gunnarsdóttir, RN, PhD, and Nanna Fríðriksdóttir, RN, MS, Landspítali University Hospital, University of Iceland, Reykjavík, Iceland; and Frída Skuladóttir, RN, BS, Ólof Birgisdóttir, RN, BS, and Vigdís Fríðriksdóttir, RN, BS, University of Iceland, Reykjavík, Iceland.

Cancer patients experience multiple debilitating symptoms. Reliable and valid instruments, preferably with international distribution, are essential to assessment and in turn management of symptoms.

Evaluate the psychometric properties of the Icelandic MDASI (M.D. Anderson Symptom Inventory) questionnaire, a brief measure of severity and interference of cancer related symptoms.

MDASI was developed by Charles Cleeland and colleagues and derives from a long program of research on cancer related symptoms.

The MDASI was translated to Icelandic and back-translated to English. First, it was evaluated by six oncology nurses and then administered to a convenience sample of 135 cancer patients undergoing treatment at the Oncology/hematology division at Landspítali University Hospital in Reykjavík. Participants were 79 women (58.5%) and 56 men (41.5%) with a mean age of 59 (SD=12.5). In addition to the MDASI, participants completed the Positive and Negative Affect Scales (PANAS), and a single item assessing quality of life (QOL). Reliability was assessed with Cronbach's alpha. Person's correlation and Factor Analysis were used to assess the validity of the MDASI.

Reliability is good for both the severity scale ( $\alpha=0.87$ ) and the interference scale ( $\alpha=0.84$ ). Validity is supported by a positive correlation between the negative scale on the PANAS and the MDASI severity scale ( $r=0.42$ ;  $p<.01$ ), and the MDASI interference scale ( $r=0.45$ ;  $p<.01$ ). It is also supported by a negative relationship between QOL and the MDASI severity scale ( $r=-0.38$ ;  $p<.01$ ), and the MDASI interference scale ( $r=-0.40$ ;  $p<.01$ ). Factor analysis did not support the usual two-factor structure of the MDASI (severity and interference). Instead, it revealed a four factor structure; 1) cognitive symptoms and interference items, 2) gastro-intestinal symptoms, 3) pain and shortness of breath, and 4) psychological symptoms and interference with relationships and enjoyment of life. The reliability and validity of the Icelandic MDASI are partly supported but warrant further investigation. The factor structure, in particular, needs further examination since it could be explained by cultural differences or the translation of the instrument. Despite this, it is recommended that the MDASI be used to assess symptoms among Icelandic cancer patients.

## 226

**AN INNOVATIVE DESIGN FOR IMMEDIATE SUBJECT ACCRUAL FOR RESEARCH.** Suzanne Lemler, RN, CCRP, Barbara Thompson, Anita Rush-Taylor, Vivian Murphy, Darlene Christmon, and Nicki Coleman, Indiana University, Indianapolis, IN.

The ability to recruit and conduct a study on a large number of subjects in a clinical trial in an efficient amount of time has been an ongoing challenge.

In order to evaluate the role of polymorphic differences in genes important in the angiogenesis pathway in breast cancer, 1000 women (500 women with history of breast cancer and 500 controls) were required. Although subjects with cancer can be recruited from clinic populations, recruitment of controls is challenging. We estimated total accrual would take months or years at great expense. To minimize resources and to optimize time, Indiana University's (IU) oncology nursing staff, supported by an oncology fellow and a patient advocate, coordinated to obtain subjects for the trial in a single day.

Not applicable.

A 5-page questionnaire (consisting of risk factors, medications, and demographic information) and a 9ml tube of blood (for future DNA extraction and genotyping) were required. Funding sources were recruited to obtain phlebotomy supplies, food for the volunteers, volunteer T-shirts, etc. Location and flow of the study were designed and mapped for the single day event, which took place 5 blocks from the Indianapolis Susan G. Komen Race for the Cure. Over 160 volunteers from a variety of disciplines were recruited to help conduct the trial. Several newsletters were created and an orientation session was presented for volunteer preparation.

On Saturday, April 16, 2005, a total of 855 subjects successfully completed the study over a 5.5-hour period. The majority of women enrolled did not have a history of breast cancer (ratio 7 to 1); therefore, recruitment to complete enrollment for breast cancer survivors continued in the clinics for 2 months with 389 additional subjects (average of 10 subjects per day) enrolled with a final count of 1244 subjects for the entire project.

In conclusion, IU's nursing staff created a model for collecting large groups of subjects in hours rather than months or years. With detailed logistical planning and effort by a committed group of volunteers, biologic samples from a large group of breast cancer survivors and controls can be collected within several hours.

Funding Sources: AstraZeneca, Pfizer, Novartis, Genentech, Roche, MGI



## 227

**PARTICIPATING PATIENTS' REACTIONS TO EARLY CLOSURE OF A CLINICAL TRIAL FOR NEGATIVE RESULTS.** Jane Bryce, RN, MSN, Marianna Connola, Antonella Salzano de Luna, Corrado Caraco, and Maria Grazia Chiofalo, Istituto Nazionale dei Tumori, Fondazione G. Pascale, Napoli, Italy; Carol Bell, RN, BSN, Stanford University School of Medicine, Palo Alto, CA; and Nicola Mozzillo, MD, Istituto Nazionale dei Tumori, Fondazione G. Pascale, Napoli, Italy.

Clinical trial (CT) literature provides information on early stopping rules and the mechanics of closure of CTs, but little guidance is available to clinicians regarding support of the patient who must abruptly stop trial therapy. An initial step is to understand patients' reactions to early stopping.

The purpose of this study is to explore patients' reactions to the early closure of a negative CT while providing education and support to patients transitioning to a new phase of care.

A cooperative inquiry framework was chosen to gain understanding together with patients and allow the clinical trial nurse (CTN) to provide nursing care through educational and supportive interventions.

The study was conducted with 16 patients enrolled in an international phase III adjuvant therapy trial for stage IV melanoma (CancerVax MMAIT-4-001) when the study was closed early after interim analysis demonstrated unlikelihood of positive results. Patients were notified in person of study closure by Investigator and CTN. The CTN conducted follow up semi-structured interviews with patients 6-10 weeks after closure to determine: patient reaction to trial closure, further treatment sought, positive and negative experiences of participating in the CT, patient informational and emotional needs. A second session was conducted 14-16 weeks after closure to disclose treatment assignments. Interviews were caring interventions providing information, emotional support and insight to help patients' transition to the next phase of treatment. Findings were evaluated for themes by CTNs. All patients continue nursing follow up at regular intervals.

Emerging themes related to closure were: initial fears of abandonment by the health care team and of doing nothing against the disease, both with diminishing impact at second interview. Positive experiences reported were perception of being cared for by the CTN, facilitated access to the health care team, and the treatment cohort as an informal support group. Negative experiences reported were being caught off-guard at study closure and the lack of treatment alternatives. Identified patient needs included reassurance, information on alternate therapies and impact of trial therapy on future options. The ongoing CTN-patient relationship provides a basis for meeting the multiple needs of patients when CTs are stopped early.

## 228

**DEVELOPMENT OF THE COMPREHENSIVE INVENTORY OF FUNCTIONING-CANCER.** Lorraine Tulman, DNSc, RN, FAAN, University of Pennsylvania, Philadelphia, PA; and Jacqueline Fawcett, PhD, RN, FAAN, University of Massachusetts-Boston, College of Nursing and Health Sciences, Boston, MA.

The Comprehensive Inventory of Functioning-Cancer (CIF-CA) is a major revision of the Inventory of Functional Status-Cancer, which has been used in numerous studies in the US and abroad.

The Comprehensive Inventory of Functioning-Cancer (CIF-CA) was developed to measure both the desired and the actual levels of functional status in women with cancer. The new scale incorporates the desired level of functioning in the measurement of functional status.

The CIF-CA is based in the role function adaptation mode of the Roy Adaptation Model. Six subscales measure women's performance of personal care, family care, household, social and community and occupational activities following diagnosis of cancer (actual functional status) and the level at which they wish to perform those activities (desired functional status).

Reliability and construct validity estimates were obtained from a sample of 190 women diagnosed with breast, lung, or colon cancer within the past two years.

Findings: The entire range of scores was used for all subscales except for the personal care activities subscale, which was slightly restricted at the low end. Estimates of internal consistency reliability were adequate for most item to subscale coefficients (.68 to .93 for actual functional

status; .61 to .85 for desired functional status) and for most subscale to total scale coefficients (.46 to .86 for actual functional status; .62 to .83 for desired functional status). Initial construct validity coefficients, using subscale-to-subscale correlations, were .10 to .61 for actual functional status and .33 to .62 for desired functional status. As expected, those correlations were relatively low, indicating that the subscales measured separate dimensions of functional status.

Implications: Further testing of the CIF-CA in women with other types of cancer is recommended. Development of a version for men is also recommended. Assessment of functional status with the CIF-CA provides the basis for nursing interventions to assist patients to adjust to changes in performance of usual activities and promote desired optimal performance. Assessment of patients' actual and desired functional status is also an important outcome of nursing and medical interventions.

## 229

**COMPARING PATIENTS', FAMILIES', AND NURSES' ASSESSMENT OF NEED FOR INTERVENTION.** Joan Bickes, MSN, APRN, BC, Margaret Falahee, APRN, Esther Bennett, RN, MSN, Janet Harden, PhD, RN, and Darlene Mood, PhD, Wayne State University, Detroit, MI; and Laurel Northouse, PhD, RN, FAAN, University of Michigan, Ann Arbor, MI.

Families facing cancer differ in their need for interventions (NFI) offered within nursing randomized clinical trials. Most studies use "one-size-fits-all" interventions not targeted to perceived needs of patients and families. For clinical utility, studies should consider the variance in NFI so that the most appropriate, efficient, cost effective care is delivered, and identify brief assessment tools that accurately measure NFI.

The purpose of this study was to: 1) describe patients', spouses', and nurses' perceived need for family-based psycho-educational intervention, 2) correlate patients', spouses', and nurses' perceived NFI, and 3) correlate NFI with risk for distress scores. This study addresses the ONS priority regarding self management strategies for patients/families.

A stress-coping framework, adapted from Lazarus, guided development of the family-based FOCUS program and study design.

A secondary analysis of data obtained during a randomized clinical trial of the FOCUS program was used to address study aims. The sample consisted of patients with prostate cancer and their spouses who participated in the intervention group (N= 70 dyads). Patients and spouses rated themselves on a five-point NFI Scale after the intervention was completed. Advanced Practice Intervention Nurses rated dyads' NFI on a five-point scale during three home visits. Patients and family members also completed Mood's reliable and valid Omega Screening Questionnaire to determine their risk for distress (RFD). Descriptive and correlational analyses were used to examine the data.

Patients and family members have varying NFI. Nurses' evaluation of NFI correlated significantly with family members' perceived NFI ( $p=.033$ ). Family members' perceptions of NFI correlated with patients' ratings of NFI ( $p=.003$ ). Both patients' and spouses' own RFD scores significantly related to their own NFI (patients=.048; family=.05). The spouses' RFD scores also related to the patients' NFI ( $p=.02$ ). The nurses' assessment of dyads' NFI was significantly related to both patients' and spouses' individual ratings of their RFD,  $p=.003$  and  $p=.011$ , respectively. Further clinical application studies are needed to explore whether a simple NFI assessment can accurately predict patients' or families' NFI, and thus be used easily and effectively in clinical settings.

## 230

**ENDURING METASTATIC CANCER PAIN.** Mary Arathuzik, DNSC, APRN, BC, Emmanuel College, Boston, MA.

Oncology nurses often care for cancer patients who are experiencing pain particularly patients with metastatic disease. Understanding key factors encountered by metastatic cancer patients who are enduring pain should provide nurses with valuable insights into how cancer patients deal with pain.

The purpose of this qualitative study was to explore how metastatic breast cancer patients endure pain. This research focuses on the priority area of symptom control.

Grounded theory method was used to study how metastatic breast cancer patients endure pain (Strauss & Corbin, 1990). Enduring cancer pain was investigated by unfolding key factors encountered with repeated metastatic pain experiences.

A purposive sample of 19 women between the ages of 20 and 80 years with a confirmed diagnosis of metastatic breast cancer who stated that they were in pain was drawn from the inpatient and outpatient populations of three community hospitals. The sample was stratified according to initial, recurrent and chronic metastatic pain experiences due to bone or nerve metastases. Concurrent and retrospective in-depth interviews provided documentation of how metastatic breast cancer patients endure cancer pain. Patients described 34 different episodes of metastatic cancer pain that they had experienced. Data collection and analysis occurred simultaneously during a two and one-half year period of time. Interview data were content analyzed according to the constant comparative method of abstracting the qualitative data into codes and categories. Three steps in coding were used: open, axial and selective coding procedures (Strauss & Corbin, 1990).

The analysis yielded a model that identifies how metastatic breast cancer patients endure the suffering of cancer pain. Enduring the suffering of metastatic cancer pain involves key factors including perceptions, feelings, and physical effects/limitations of the pain. Faith, hope and supportive relationships are resources that sustain metastatic breast cancer patients enduring cancer pain. Nurses and other health professionals should understand how metastatic cancer patients endure pain so that they can assist these patients to deal with their suffering.

Funding Sources: Purdue Research Grant

## 231

COMPARISON OF PATIENT-REPORTED BARRIERS TO CANCER PAIN MANAGEMENT VERSUS THEIR ONCOLOGY NURSES' PERCEPTIONS IN 18 HOSPITALIZED PATIENTS. Kristin Negley, MS, RN, and Laura Luna, MS, RN, Mayo Clinic, Rochester, MN.

Although 90% of cancer pain can be controlled with available treatment options, moderate to severe pain is experienced by 40% of all patients with cancer and up to 90% of patients with advanced disease. Research has shown that possible causes of undertreated cancer pain are barriers patients have to the reporting of pain and use of analgesics. The authors were unable to locate any research regarding the accuracy of nurses' assessments of patients' barriers to pain management, but research has shown patient education addressing barriers can impact pain management.

The purposes of this study were 1) to evaluate patients' responses to questions regarding their perceived barriers to the reporting of pain and use of analgesia and 2) to determine how nurses' perceptions of their patients' barriers compared to the patients' self-reported barriers.

Researchers have identified and assessed eight specific concerns or misconceptions thought to be barriers to pain management. They developed a 27-item Barriers Questionnaire-II (BQ-II) designed to measure the extent to which patients have barriers affecting their pain management.

Patients were asked to complete the BQ-II questionnaire and nurses were also asked to complete the questionnaire in the way they thought the patient they were caring for had responded to the questionnaire. This tool was applied in 18 patient-nurse dyads.

To evaluate the correlation and level of difference between nurses' and patients' barrier assessments, descriptive statistics were used including Bland and Altman plots and paired t-tests for the total BQ-II scores as well as the subscales. For those subscales found to be statistically significant, the individual questions were also analyzed.

Overall, nurses agreed patient barriers occurred, but under perceived their extent ( $p=.03$ ). Nurses scored well in the communication subscale ( $p=.80$ ) and in the fatalism subscale ( $p=.38$ ) but under perceived barriers regarding physiological effects ( $p=.01$ ) and harmful effects ( $p=.002$ ). Results obtained from this research demonstrate the importance of accurately assessing patient's barriers to the management of cancer pain. This information could be used in pain management classes to enlighten nurses to the possibility of under perceiving their patients' barriers, thereby significantly improving control of pain in their cancer patients.

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DIFFERENCES IN PSYCHOMETRIC PROPERTIES OF PAIN MEASUREMENT SCALES BETWEEN CAUCASIAN AND ASIAN CANCER PATIENTS IN THE U.S. Hyunjeong Shin, RN, PhD, and Kyung Suk Kim, RN, PhD, University of Texas at Austin, Austin, TX; Young Hee Kim, RN, PhD, Dongguk University,

Gyeongju, Korea; and Wonshik Chee, PhD, and Eun-Ok Im, RN, PhD, CNS, MPH, FAAN, University of Texas at Austin, Austin, TX.

A variety of pain measurement scales have been used without critical evaluation of their reliability and validity in different ethnic groups. Since most of the pain measurement scales have been developed based on the data only among White cancer patients, the measurement scales sometimes work inadequately among different ethnic groups.

The purpose of this study was to evaluate and compare psychometric properties of pain measurement scales between Caucasian and Asian-American cancer patients.

N/A

This study was a comparative psychometric study, which was conducted as a part of a larger multiethnic cancer pain study. A total of 152 Caucasian and 119 Asian-American cancer patients were recruited through the Internet using a convenience sampling method. Only the data from 83 Asian-American cancer patients matched with those of 83 Caucasian cancer patients were included for this study. The Visual Analog Scale (VAS), the Verbal Descriptive Scale (VDS), the Face Pain Scale (FPS), the McGill Pain Questionnaire-Short Form (MPQ-SF), and the Brief Pain Inventory-Short Form (BPI-SF) were used to measure cancer pain. The Memorial Symptom Assessment Scale (MSAS) and the Functional Assessment of Cancer Therapy Scale (FACT-G) were used to measure symptoms and functional status, respectively. To evaluate the internal reliability of the MPQ-SF and BPI-SF, Cronbach's alpha coefficients and subscale-to-total correlations were examined. Construct validity was explored by examining the relationships between five pain measurement scales. In addition, construct validity was also explored by examining the correlations of the pain measures to the MSAS and the FACT-G scores.

The Cronbach's alpha coefficients of the MPQ-SF and BPI-SF were high (0.85-0.97) and the subscale-to-total correlations were strong in both ethnic groups (0.87-0.99). Regarding construct validity, all five pain measurement scales were found to be valid in both ethnic groups. However, among Asian-American cancer patients, the MPQ-SF scores showed relatively low correlations with other pain scale scores (0.65-0.68), the MSAS scores (0.56), and the FACT-G scores (-0.52). The findings suggest that there are differences in psychometric properties of pain measurement scales among different ethnic groups and that the MPQ-SF may not work well among Asian-American cancer patients.

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PATIENT EXPERIENCE WITH FENTANYL EFFERVESCENT BUCCAL TABLETS: INTERIM ANALYSIS OF A LONG-TERM STUDY IN PATIENTS WITH CANCER-RELATED BREAKTHROUGH PAIN. Michelle Rhiner, RN, MSN, NP, ACHPN, City of Hope Cancer Center, University of California, Los Angeles, Duarte, CA; Chantal Kerr, RN, MBA, CHPN, City of Hope National Medical Center, Duarte, CA; Donalyn Lamarre, RN, Duarte, CA; John Messina, PharmD, Frazer, PA; and Neal Slatkin, MD, DABPM, City of Hope National Medical Center, Duarte, CA.

Breakthrough pain (BTP) is reported by 50-90% of cancer patients and can significantly affect quality of life and functional status. Episodes of BTP often peak within minutes, thus, analgesics with a rapid onset of effect may improve outcomes. Fentanyl effervescent buccal tablets (FEBT) enhance the rate and efficiency of fentanyl absorption through the buccal mucosa, which is intended to provide rapid-onset analgesia.

This study evaluated the long-term safety of FEBT in opioid-tolerant patients with cancer-related BTP. Results reported here represent a planned interim analysis.

The evaluation of long-term safety and tolerability of any drug taken chronically is important.

Patients eligible for this open-label, multicenter study were receiving stable doses of around-the-clock opioids for baseline pain and supplemental opioids for BTP. Patients who had participated in a previous FEBT efficacy study enrolled directly into the long-term (1-year) phase; new patients entered a titration phase to determine an effective FEBT dose before entering the long-term phase. Enrollment is planned for approximately 500 patients. As of July 29, 2005, 158 patients (aged 24 to 95 years) had received FEBT (100-800 µg) and had data on titration and adverse events (AEs).

Patients experienced  $3.0 \pm 1.7$  BTP episodes per day and received a mean FEBT dose per BTP episode of 514.8 µg (mean exposure=84.4 days). Dose adjustments were required by 15.5% of patients (13.2% of patients required an increase in dose). The proportion of patients at each FEBT

dose was 6% at 100 µg, 16% at 200 µg, 21% at 400 µg, 26% at 600 µg, and 31% at 800 µg. The most common AEs were nausea (35%), vomiting (20%), dizziness (20%), fatigue (15%), headache (12%), and anemia (11%). The majority of AEs (67%) were mild or moderate; 20% of patients discontinued because of AEs. The most frequent reasons for discontinuation were uncontrolled persistent cancer pain, metastatic lung cancer, and nausea (each 2%). Twenty-four deaths occurred; all were attributed to cancer-related pathology or the progression of cancer.

These data suggest that FEBT are well-tolerated by opioid-tolerant patients with cancer-related BTP and that few patients require dose increases after titration to maintain control of BTP.

Funding Sources: Cephalon, Inc., Frazer, PA

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**DIFFERENCES IN CANCER PAIN EXPERIENCE BETWEEN ASIAN AND CAUCASIAN CANCER PATIENTS IN THE UNITED STATES.** Kyung Suk Kim, PhD, RN, University of Texas at Austin, Austin, TX; Young Hee Kim, PhD, RN, University of Dongguk, Gyeongju, Korea; and Hyunjeong Shin, PhD, RN, Wonshik Chee, PhD, and Eun-Ok Im, PhD, MPH, RN, CNS, FAAN, University of Texas at Austin, Austin, TX.

Very few studies have explored ethnic differences in cancer pain experience. Furthermore, the few studies tend to be limited to African American, Hispanic, and Caucasian cancer patients. Consequently, little is known about Asian cancer patients' cancer pain experience.

This study was to explore and compare cancer pain experience between Asian and Caucasian cancer patients in the U. S. Cancer pain experience was operationalized and measured as pain, symptoms accompanying pain, and functional status.

A feminist approach was used in this study.

This was a cross-sectional and comparative study. 166 cancer patients (83 Asian and 83 Caucasian cancer patients) were recruited through the Internet. The questionnaires were composed of the Verbal Descriptor Scale (VDS), the Visual Analogue Scale (VAS), the Wong-Baker Faces Pain Scale (FPS), the McGill Pain Questionnaire-Short Form (MPQ-SF), the Brief Pain Inventory (BPI), the Memorial Symptom Assessment Scale (MSAS), and the Functional Assessment of Cancer Therapy Scale (FACT-G). The data were analyzed using Chi-square tests and Mann-Whitney U-tests.

Among Asian cancer patients, the mean VDS score was 2.00 (SD=1.24); the mean VAS score was 21.80 (SD=30.22); the mean FPS score was 2.45 (SD=1.59); the mean MPQ score was 5.56 (SD=9.54); and the mean BPI score was 26.10 (SD=26.88). Among Caucasian cancer patients, the mean VDS score was 2.83 (SD=1.40); the mean VAS score was 40.24 (SD=33.28); the mean FPS score was 3.29 (SD=1.50); the mean MPQ score was 11.94 (SD=11.07); and the mean BPI score was 38.78 (SD=30.27). The mean symptom number of the Asian group was 9.63 (SD=6.16) and that of Caucasian group was 10.81 (SD=8.04). Also, the mean FACT-G score of the Asian group was 78.68 (SD=19.54) and that of Caucasian group was 71.04 (SD=21.62). There were statistically significant differences in the cancer pain scores between Asian and Caucasian cancer patients ( $p<.01$ ). However, there was no significant difference in symptoms accompanying pain and functional status between the two groups. The findings suggest that nurses need to understand ethnic differences in cancer pain experience.

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**GENDER DIFFERENCES IN PAIN EXPERIENCE AMONG CAUCASIAN AND ASIAN CANCER PATIENTS.** Young Hee Kim, RN, PhD, Hyunjeong Shin, PhD, RN, Kyung Suk Kim, PhD, RN, Wonshik Chee, PhD, and Eun-Ok Im, PhD, MPH, RN, CNS, FAAN, University of Texas at Austin, Austin, TX.

Studies have reported inconsistent findings on gender difference in cancer pain experience: some reported certain gender differences while others reported no difference. Furthermore, women's pain tended to be ignored and inadequately treated.

The aims for this study were to (a) determine gender differences in self-reported cancer pain, symptoms accompanying pain, and functional status, and (b) explore commonalities and differences in cancer pain experience between women and men.

Feminist approach was used to explore gender differences in cancer pain experience

Methods: This study was a cross-sectional study including both quantitative and qualitative phases. A total of 262 participants for the quantitative phase were recruited through the Internet and e-mail system using

a convenience sampling method, and 41 participants among them were recruited for the qualitative phase.

Analysis: The quantitative data were analyzed using ANCOVA, and the qualitative data were analyzed using thematic analysis.

The quantitative findings indicated that there was no significant gender difference in cancer pain, symptoms accompanying pain, and functional status. The qualitative findings indicated five categories that contrasted women's cancer pain experience from men's cancer pain experience: (a) gender differences in the meanings of cancer pain; (b) gender differences in attitudes toward cancer pain; (c) problems in pain management regardless gender; (d) controlling cancer pain in women and men; (e) gender differences in pain characteristics. The categories reflected the subtle differences of nuance but important in women's cancer pain experience. The findings suggest that nurses need to respect women's own perceived needs and attitudes influencing their cancer pain experience.

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**COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM): MOST FREQUENT REQUESTS BY CANCER SURVIVORS.** Teresa Rojas-Cooley, RN, and Marcia Grant, RN, DNSc, FAAN, City of Hope National Medical Center, Duarte, CA.

CAM use in the oncology population has increased from 30% to 83%. A person is defined as a cancer survivor from the time of diagnosis to the balance of their life. Over 10 million cancer survivors alive in the US are looking to maintain good health before, during, and after treatment. CAM use is one way cancer survivors maintain health and quality of life. A good majority will ask their family and friends about which CAM therapies work best but it is not known if they will also solicit their oncology nurses for this crucial information.

The purpose of this study is to describe the oncology nurses' experience with cancer survivors discussing specific herbs, mega vitamins, and special diets.

Principles of adult education, CAM theory, and change theory are used as a conceptual model for the development and implementation of this study. Results will contribute to the long-term goal of CAM education specifically for oncology nurses.

This descriptive study used a mailed self-administered packet that included an invitation to participate, demographic questionnaire, the Nurse Complementary and Alternative Medicine Knowledge and Attitude (Nr CAM K & A) Survey, and a self-addressed stamped envelope for anonymous return of the survey. A randomized national sample was obtained of Oncology Nursing Society members who are involved in direct patient care. A total of 3,637 packets were mailed. Received were 865 with 850 analyzed. Response rate was 24%. Frequencies were tallied for the herbs, mega-vitamins, and special diets that patients discussed the most. The top three herbs were Black Cohosh, St. Johns Wort, and Echinacea. The top three mega-vitamins were Vitamin C, E, and B 6 & 12. The top three special diets were Macrobiotic, Vegetarian, and High Protein.

Oncology patients do have discussions with their direct patient care oncology nurses regarding specific herbs, mega-vitamins, and special diets. Oncology nurses need to be prepared to provide evidence-based information to the growing number of cancer survivors as they search to promote their health. CAM education and reliable patient resources ought to be the priority for nurses, educators, and administrators.

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**EXAMINING PATIENT EDUCATION NEEDS RELATED TO TREATMENT OF LUNG CANCER: AGE-RELATED ANALYSIS IN 9 NURSING-SENSITIVE PATIENT OUTCOMES.** Beverly Davis, RN, MSN, AOCN®, and Judith Petersen, RN, MN, AOCN®, Nexcura, Seattle, WA.

Lung cancer continues to be the leading cause of death among men and women; research for improved treatment is ongoing. Developments including expanded use of combined modality therapy pose a challenge to nurses addressing patients' educational needs. Little is known regarding patient perspective on adequacy of education about specific symptoms and adverse treatment effects.

The purpose was to evaluate patient satisfaction with education about individual symptoms and adverse effects. Because symptoms and adverse effects correlate with ONS-defined Nursing Sensitive Patient Outcomes or NSPOs (a priority topic in the ONS 2005-2009 Research Agenda), findings can be used in planning improved patient education in NSPOs.



The work was guided by ONS Standards of Education and the UCSF Symptom Management Model.

Patients completed a survey regarding satisfaction with education provided by health care professionals. All patients who had registered electronically to NexCura's Lung Cancer Treatment Option Tool between August 2004 and March 2005 were invited to participate; the survey was sent 3-9 months after their use of the Tool. Patients were asked to rank each topic, including 9 NSPOs, individually on a scale from very satisfied through very dissatisfied. 1,362 (13.2%) of 10,317 invitees completed the survey. Reported levels of dissatisfaction were compared among 9 NSPOs. Additionally, dissatisfaction among patients <70 was compared with patients 70 and >.

Of the 1,362 respondents (417 small cell and 945 non-small cell), 23.7% were age 70 or >. Among all ages combined, topics about which dissatisfaction was greatest were psychosocial distress (dissatisfaction reported by 29.4% +/- 2.76%, 95%CI) and hearing loss (27.5% +/- 3.19). The topic with least dissatisfaction was nausea/vomiting (nausea 10.6% +/- 1.75). Among patients <70 years, greatest dissatisfaction was with psychosocial distress and hearing loss. Among patients 70 or >, greatest dissatisfaction was with psychosocial distress, hearing loss, and radiation-related dyspnea/cough. In this group of 1,362 patients, elderly patients' satisfaction with education was not significantly different from younger patients. The NSPO in which educational needs are met most consistently is nausea/vomiting. Findings support the need for improved education regarding hearing loss and psychosocial distress.

Funding Sources: NexCura is a health care information company that develops Web-based clinical decision-support tools called NexProfiler Treatment Option Tools(tm).

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**SELF-CARE AND COPING ACTIVITIES OF METASTATIC BREAST CANCER PATIENTS: DESCRIPTION AND FACTORS ASSOCIATED WITH USE.** Susan Bauer-Wu, DNSc, RN, and Rebecca Norris, BA, Dana-Farber Cancer Institute, Boston, MA; and Qin Liu, PhD, University of Massachusetts Medical School, Worcester, MA.

Living with metastatic breast cancer can be physically and emotionally challenging. How individuals cope with the experience can be quite variable. Considerable research has described coping and self-care activities in early stage breast cancer patients, however little is known about this issue for women with advanced stages.

To describe coping and self-care activities used by women with metastatic breast cancer and to examine relationships between participation in these activities, demographics characteristics, and cancer coping style.

City of Hope's Quality of Life framework and Watson and Greer's principles on cancer coping styles guided this work.

Advanced-stage breast cancer patients (N=173) from five cancer treatment facilities across New England completed questionnaires at one time point, assessing cancer coping style (Mini Mental Adjustment to Cancer), demographic characteristics, and different self-care and coping activities. Descriptive and logistic regression analyses were conducted for this secondary analysis, using baseline data from a longitudinal intervention study.

This sample of women with advanced breast cancer commonly used self-care activities, and coping style influenced their participation in some of these activities. A high percentage of participants participated in aerobic exercise at least 2-3 times per week (57%), used prayer/spiritual practices on a regular basis (73%), participated in a cancer support group (45%), and confided in someone when feeling upset (96%), especially significant other. Additionally 26% were keeping a journal. Younger patients (p=0.003), with higher levels of education (p=0.009), and a fatalistic coping style (p=0.02) were more likely to practice yoga/meditation. Use of prayer or other spiritual practices was associated with a fatalistic coping style (p<0.0001), and negatively associated with helplessness/hopelessness (p=0.046) and cognitive avoidance (p=0.004) coping style. Patients who kept a journal were more likely to have a lower performance status (p=0.042) and have a helplessness/hopelessness (p=0.009) coping style. Oncology nurses and other healthcare professionals can be sensitive to their patients' coping styles and provide guidance accordingly on self-care and coping activities that may be most helpful.

## 239

**FATIGUE IN PATIENTS WITH GASTRIC CANCER DURING CHEMOTHERAPY.** Sun-Hee Kim, PhD(c), RN, and Won-Hee Lee, PhD, RN, Yonsei University College of Nursing, Seoul, Korea.

Fatigue is the most common stress response among cancer patients and multidimensional phenomena that is composed of psychosocial factor as well as physiological factor.

Because the Intensity and pattern of fatigue are various according to the cancer type, treatment and regimen, they should be understood prior to offer fatigue intervention.

The purpose of this study was to identify the pattern of fatigue and its related factors in patients with gastric cancer during chemotherapy using a 5-FU and Adriamycin regimen.

This study was based on the Piper's Integrative Fatigue Model.

Thirty participants (24 males and 6 females) were recruited for this study with a longitudinal and descriptive approach.

The research instruments were the Revised Piper Fatigue Scale, Symptom Distress Scale and Linear Analogue Self Assessment Scale.

The patients received 5-FU and Adriamycin at the first week, 5-FU at the second week and 5-FU at the third week.

The measurements were taken six times in total, as follows:

Within 2 hours right after the first 5-FU and Adriamycin infusion (one);

Three days after the initial infusion above (two);

Within 2 hours after the second and third 5-FU infusion respectively (three and five);

And three days after the second and third 5-FU infusion above (four and six).

Data were analyzed by repeated measure ANOVA and Pearson correlation.

It was found out that the fatigue score in patients, receiving chemotherapy using 5-FU and Adriamycin regimen, reached the highest level on the third day after the initial infusion, but decreased continuously after it.

The symptom and psychological distress scores showed the very similar pattern.

Multidimensionality of fatigue scale was supported in this study, in that all the four dimensions of the scale were positively correlated.

The results of this study can also provide gastric cancer patients with some information on fatigue and other symptoms that they may experience during chemotherapy.

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**SYMPTOM CLUSTER GROUPINGS' MEMBERSHIP CHANGES OVER ONE YEAR.** Marilyn Dodd, RN, PhD, FAAN, Maria Cho, RN, PhD, Bruce Cooper, PhD, Christine Miaskowski, RN, PhD, FAAN, Kathryn A. Lee, RN, PhD, and Kayee A. Bank, RN, MS, School of Nursing, University of California, San Francisco, San Francisco, CA.

Symptom clusters is a new frontier in symptom management research. There are an increasing number of published articles, but NO studies that have reported the changes in symptom cluster patient group membership over time. The present study will fill this void.

Research Questions:

1. Can groups of oncology outpatients be identified based on how their symptoms cluster (i.e., pain, fatigue, sleep disturbances, and depressive mood)?
2. Do patients in different symptom cluster groupings differ in outcomes (i.e., functional status and quality of life)?
3. Do symptom cluster group memberships change overtime during and after cancer treatment?

Symptom Management Model (Dodd, et al. 2001).

92 women with breast cancer, mean age of 50 years, completed several established instruments (i.e., Brief Pain Inventory, Piper's Fatigue Scale, General Sleep Disturbance Scale, CES-Depression, Karnofsky's Performance Status, and MQOL-CA2) three times in an ongoing randomized clinical trial. T1= baseline after the first cycle of CTX, T2= after completion of cancer treatment, T3= end of the study, 6 months after T2. Cluster analysis is a statistical technique used to cluster similar patients in subgroups based on their symptom experience.

Four symptom cluster groups were identified at T1, T2 & T3. The groupings were: Low on all symptom scores; High on all symptom scores; and

two remaining cluster subgroups were a mix of high/moderate and low symptom scores with the severity of pain being the distinguishing feature between these two groupings.

The all Low symptom subgroup had significantly higher performance status and quality of life scores than the other 3 subgroups. Changes in cluster group membership clearly showed a shift from lower symptom severity to higher levels from T1 to T2; and a shift from higher levels to lower levels of severity during the recovery period from T2 to T3.

This presentation is the first to report changes in symptom clusters overtime and furthers our understanding of the course of the symptom experience, with implications for the impact of symptom clusters and the timing of interventions.

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**CHANGES IN PHYSICAL ACTIVITY: HOME TO HOSPITALIZATION.** Eileen Hacker, PhD, RN, AOCN®, and Carol Ferrans, PhD, University of Illinois at Chicago, Chicago, IL.

Clinical observations suggest that patients experience significant reductions in physical activity following an intensive preparatory regimen and hematopoietic stem cell transplantation (HSCT). No studies found in the HSCT literature examined changes in physical activity. This may be due, in part, to the methodological difficulties associated with quantifying objective measures of physical activity. Oncology nurses need this information to identify effective interventions aimed at mitigating problems, such as physical inactivity, loss of strength, and fatigue.

The purpose of the study was to describe changes in physical activity before and after HSCT. This research addresses the 2005-2009 ONS Research Agenda by describing changes in physical activity levels and physical functioning, both nursing sensitive patient outcomes.

Wilson and Cleary's Conceptual Model of Patient Outcomes guided the study.

This study used a prospective, repeated measures design. The convenience sample ( $n = 16$ ) was drawn from two academic medical centers. The Actiwatch-Score® was used to quantify physical activity. This accelerometer monitors the occurrence and degree of motion using a piezoelectric sensor. The device is the size of a wristwatch and worn on the non-dominant hand. Physical activity levels were assessed over a five-day period before admission to the hospital for the intensive preparatory regimen and HSCT and immediately following the transplant on days 4 through 8. Descriptive statistics and one-way repeated measures ANOVA were used to analyze the data. Study results indicate that physical activity significantly declined following HSCT ( $p < 0.001$ ). The greatest decline in physical activity levels occurred during the evening hours (4 p.m. – 12 p.m.) with a 63% reduction in levels. Daytime (8 a.m. – 4 p.m.) physical activity levels fell by 62% and night time (12 a.m. – 8 a.m.) levels fell by 26%.

This is the first study to objectively document changes in physical activity following HSCT. Patients receiving a hematopoietic stem cell transplant patients may be at risk for multiple physical complications, especially if physical activity is severely limited while hospitalized and following discharge from the hospital. Interventions directed toward increasing physical activity and maintaining muscle mass in HSCT patients are needed to minimize the complications associated with decreased physical activity.

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**DESCRIPTION OF BREAST CANCER EXPERIENCE AMONG WOMEN ONE YEAR AFTER COMPLETION OF RADIATION THERAPY.** Jean Pupkes, MSN, RN, AOCN®, APRN-BC, North Memorial Medical Center, Minneapolis, MN; and Ken Hepburn, PhD, University of Minnesota, Minneapolis, MN.

Breast cancer is the most prevalent female cancer and the second leading cause of cancer death in the United States. The American Cancer Society states 5-year survival rate for localized breast cancer is over 90%. Understanding the experience of women who have completed treatment may help facilitate recovery.

The study's purpose was to understand the experience for women with breast cancer one year after radiation therapy treatment. The data is an analysis of narratives included as part of an ongoing prospective, longitudinal study of women receiving radiation therapy for breast cancer. Thirty-three of the 69 women who completed the longitudinal study wrote narratives about their experience at the 12-month end point. They answered: "Is there anything else that you would like to tell us that might help us understand what your experience with breast cancer is like?"

The philosophical underpinnings of phenomenology, which relies on descriptions to understand lived experience, served as the framework for the study.

Van Kaam's phenomenological approach guided the analysis. The narratives were read to elicit the essence of the experience. Common themes were identified. Hypothetical definitions of the themes were generated and validated with the narratives to finalize structural definitions. To establish confirmability, the narratives were independently read by a second researcher and then jointly reread to identify areas of agreement and disagreement. Through discussion, themes were refined and narratives unrelated to the experience eliminated.

Three main themes emerged: Lucky, Lurking and Living. Lucky is feeling fortunate and blessed, stating one is lucky, and exhibiting confidence of a successful outcome. Lurking is feeling that the cancer experience is lingering with an inability to move beyond that constant worry. Living acknowledges the difficulty of the cancer experience, while moving beyond the experience and engaging in normal living.

Nurses can affirm the positive evaluations of women who have expressions of feeling Lucky or who have transitioned to Living. Women who describe breast cancer as Lurking one year following treatment, may benefit from strategies to assist in coping with the cancer experience. These women may need ongoing assistance with their recovery.

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**THE EFFECT OF AN EXERCISE INTERVENTION ON QOL AND SYMPTOMS IN BREAST CANCER SURVIVORS.** M. Tish Knobf, RN, PhD, AOCN®, and Kristopher Fennie, PhD, Yale School of Nursing, New Haven, CT; Daniele Avila, MSN, National Institutes of Health, Bethesda, MD; Paige Woodward, BSN, Yale New Haven Hospital, New Haven, CT; A. Siobhan Thompson, MPH, Yale School of Nursing, New Haven, CT; and Loretta Diepietro, PhD, Yale School of Medicine, New Haven, CT.

Women with breast cancer represent 40% of the 5.6 million female cancer survivors in the United States. Interventions to minimize adverse treatment outcomes and promote positive health behaviors for cancer survivors are needed.

The purpose of this pilot study was to evaluate the feasibility and effect of an aerobic-resistive exercise intervention on bone remodeling, body composition, quality of life and physical and psychological symptoms. This analysis will report on quality of life outcomes and selected physical and psychological symptoms.

### Quality of Life

A one group pre and posttest design was used to test a 3 sessions per week, 16 to 24 week supervised aerobic-resistive exercise intervention. Women with breast cancer who were within two years of menopause or discontinuance of hormone replacement therapy and completed non-hormonal primary or adjuvant therapy were eligible. Data were collected at baseline, 16 and 24 weeks. Quality of life was measured by the Rand Health Survey, which consists of eight subscales of functional ability and general health (McHorney, Ware & Sherborne, 1994). The Breast Cancer Prevention Trial Checklist (BCPT) is a 43-item list of symptoms related to menopause and hormonal therapy side effects (Ganz, et al 1998). The CES-D (Radloff, 1977) measures depression and has a score range of 0 to 60. Repeated measures of analysis was used.

The sample consisted of 26 subjects, the majority of whom were married, well educated, employed with a mean age of 51.3 yrs ( $SD=6.2$ ). The majority had received adjuvant chemotherapy (65%) and 62% were on adjuvant endocrine therapy. The intervention was feasible with high adherence rates (75%-98%). There was a trend for improvement in physical functioning over time ( $p=.07$ ). Emotional functioning improved over time ( $p=.04$ ) and depression scores improved significantly ( $p=.02$ ) between baseline ( $M=10.9$   $SD=8.6$ ) and 24 weeks ( $M=7.0$   $SD=7.8$ ). For menopausal symptoms at baseline, 88% of women reported hot flashes, 52% vaginal dryness, 30% dyspareunia, 64% night sweats and 50% early awakenings and there was no significant change over 16 weeks.

The exercise intervention was feasible and results indicate psychological benefits and a trend toward improvement in physical functioning despite persistent menopausal symptoms.

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**QUALITY OF LIFE OF BREAST CANCER SURVIVORS: COMPARISONS REGARDING THE GENERAL POPULATION, ETHNICITY, AND URBAN VS.**

SUBURBAN NEIGHBORHOODS. Carol Ferrans, PhD, RN, FAAN, Eileen Hacker, Karen Masino, Lisa Dobogai, and Marcia Mickle, University of Illinois, Chicago, IL.

The majority of women diagnosed with breast cancer will become long-term survivors. To better develop health care services to meet their needs, we need to understand the differences in quality of life (QOL) among various groups of cancer survivors.

The purpose of this study was to compare the QOL of long-term breast cancer survivors with women from the general population, and to examine the effect of ethnicity and location of residence (urban vs. suburban).

The Ferrans (1996) conceptual model of quality of life guided this study.

Data were collected by mailing questionnaires to participants' homes. All cancer survivors (n = 498) had completed treatment at least 12 months before participating in the study. Cancer survivor data were compared with questionnaires completed by women from the general population (n = 267).

Cancer survivors were found to have significantly better QOL than women in the general population. QOL was better for cancer survivors overall, as well as in four life domains: health and functioning, psychological/spiritual, social and economic, and family. In their qualitative responses, cancer survivors reported positive changes in their lives as a result of their experience with cancer, contributing to improved QOL. Examination of the cancer survivor data showed that those who lived in urban neighborhoods had a significantly lower QOL than those who living in suburban areas. This was the case even though the urban group was significantly younger. This was found for both Caucasians and African Americans, demonstrating that living environment and socioeconomic status had a greater effect on QOL than ethnicity. In fact, the Caucasian women living in urban neighborhoods had a lower QOL than the African Americans in similar neighborhoods. Greater depression and social isolation may have contributed to the poorer QOL of the urban Caucasian group. The findings demonstrated that the cancer survivors living in urban neighborhoods had a greater need for supportive services than those in suburban areas. The results of this study can be used to help identify differences in needs for breast cancer survivors, particularly those in urban areas.

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CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY (CIPN): PATIENT PERSPECTIVES ON WHETHER TO CONTINUE NEUROTOXIC TREATMENT. Marie Bakitas, DNSc(c), ARNP, AOCN®, FAAN, Dartmouth-Hitchcock Medical Center, Lebanon, NH.

Chemotherapy-induced peripheral neuropathy is a common, but understudied dose-limiting toxicity of chemotherapy. CIPN incidence ranges from 10-100% depending on the drug(s), dose(s), patient factors, and measurement system. Empirical reports using quantitative objective measures identify a wide spectrum of impact from "minimal" to "devastating"; however subjective data is lacking regarding specific symptoms and the impact on everyday life. As a result, CIPN has been identified as a priority symptom within the 2005-09 ONS-Research Agenda.

The overall purpose of the current study was to describe patient's perspectives on the symptom experience and the impact of symptoms on everyday life. A secondary aim was to understand the influence of symptoms on treatment decision-making.

Current measures do not capture the clinically relevant patient perspective on the subjective CIPN experience. In order to address this gap, the naturalistic paradigm (Lincoln & Guba, 1985) was chosen to give voice to previously unrevealed, in-depth aspects of the symptom experience and how these effects influence everyday life, and decisions about whether to continue neurotoxic treatments.

This exploratory, qualitative descriptive study identified CIPN symptoms and their effect on everyday life. Verbatim transcribed interviews were coded and analyzed using Atlas-TI software. A progressive process of classifying, comparing, grouping, and refining data resulted in patterns, relationships, and themes that provided insights about symptoms, and CIPN impact on everyday life and treatment decisions. Conceptual redundancy (saturation) was reached after 28 interviews.

Five over-arching themes emerged that provided a comprehensive understanding of CIPN symptoms, functional effects, and treatment

decision-making. This presentation will focus on the over-arching theme of "Making Choices". Sub themes included: "Thinking it Through", "Doing Whatever it Takes", and "Changing Course". Currently, subjective symptom reports and function are the determining factors in chemotherapy dose reduction or discontinuation. However, little is known about how this process occurs. The current study adds to our understanding of the patient's perspective on that process including insights about how clinicians approached this process and how patient's weighed CIPN symptoms with their (or the clinician's) desire to continue beneficial, but neurotoxic chemotherapy.

Funding Sources: Department of Defense, Breast Cancer Research Program

## 246

EFFECTS OF ACUTE AND DELAYED CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING ON QUALITY OF LIFE IN WOMEN WITH BREAST CANCER. Regina Cunningham, PhD, RN, AOCN®, UMDNJ-Robert Wood Johnson Medical School, The Cancer Institute of New Jersey, New Brunswick, NJ; and Henry Hu, MD, PhD, and Ya-Ting Chen, PhD, Merck, West Point, PA.

Acute and delayed chemotherapy-induced nausea and vomiting (CINV) are among the most common and distressing side effects of therapy in women receiving treatment for breast cancer. This patient population has specific risk factors that predispose them to the development of CINV. Little is known about the incidence of CINV, use of antiemetics, and effect on quality of life (QOL) outcomes in women treated for breast cancer in the community oncology setting.

The purpose of this investigation was to determine the incidence of acute and delayed CINV, identify antiemetic usage patterns, and assess the effect of CINV on QOL outcomes in a sample of women receiving breast cancer treatment in the community oncology setting.

The conceptual model used to guide this investigation is based on the work of Donabedian who identified the structure, process, outcome trilogy as essential components of the measurement of quality in health care. Outcomes represent the consequences of the structure and process of care on the health and welfare of recipients of that care. In this investigation, the community setting represents a structural variable, patterns of antiemetic usage represents a process variable, and incidence of CINV and QOL are the outcomes under investigation.

This was a prospective observational study. Eligibility criteria included: aged 18 or greater; histologically confirmed breast cancer receiving chemotherapy; no history of emesis during the 24 hours preceding chemotherapy; no concomitant meds that would induce nausea or vomiting; no concurrent therapy (radiation, hormonal therapy). Demographics and risk factors were self-reported. Community oncologists provided chemotherapy and antiemetic regimen data. Incidence of CINV and QOL were assessed using the Functional Living Index-Emesis (FLIE) Incidence and QOL were measured days 1 and 2-4 post chemotherapy.

The study enrolled 461 women. The mean age was 54.4 (SD 10.6 years). Fifteen percent had received previous chemotherapy. Antiemetic usage varied. Delayed CINV more profoundly affected QOL. Nausea had a greater effect on QOL than did vomiting.

CINV is a common problem in women receiving treatment in the community oncology setting. Some antiemetics are underutilized. Oncology nurses are in a position to make recommendations to optimize antiemetic prophylaxis and improve QOL.

Funding Sources: Merck

## 247

FATIGUE, SLEEP AND CIRCADIAN RHYTHMS AT BASELINE AND AFTER THE FIRST ADJUVANT BREAST CANCER CHEMOTHERAPY TREATMENT WITHIN A RANDOMIZED CONTROL TRIAL. Ann Berger, PhD, RN, AOCN®, FAAN, and Patricia Fischer, BSN, RN, CCRC, University of Nebraska Medical Center, Omaha, NE; Lynne Farr, PhD, retired, Omaha, NE; and Brett Kuhn and Sangeeta Agrawal, MSc, University of Nebraska Medical Center, Omaha, NE.

Interventions to manage fatigue during and after adjuvant breast cancer chemotherapy are needed to control this distressing symptom.

To evaluate the immediate impact of a tailored behavioral sleep intervention (BSI), delivered two days before the first chemotherapy treatment, on fatigue, sleep and circadian rhythms. Managing fatigue is an ONS research priority.



### Piper's Integrated Fatigue Model

Randomized control trial comparing a behavioral sleep intervention to a healthy eating control group; N=93, post-operative, with Stage I/II/IIIA breast cancer, receiving adjuvant chemotherapy; mean age =51; most were married and employed. Piper Fatigue Scale (PFS), Pittsburgh Sleep Quality Index (PSQI), wrist actigraphy for 24-hour sleep/wake patterns (2 days baseline plus 7 days after chemotherapy); descriptive statistics, correlations, RM-ANOVA

At baseline, there were no group differences on demographics; nor on PFS [ $\mu=2.44(1.92)$ ] or PSQI [ $\mu=6.66(3.39)$ ]. PSQI score was >5 in 57% and >8 in 26% of subjects. Actigraphy data showed no group differences on total sleep time, percent time awake and number of night awakenings; minutes awake after sleep onset (WASO) [ $\mu=55.4(52.5)$ ] was prolonged. After chemotherapy, mean PFS rose to 4.76(2.53). Actigraphy data showed non-significant increases in the sleep variables; WASO remained prolonged [ $\mu=74.9(70.1)$ ]. Baseline circadian rhythm variables were: mesor [ $\mu=134.08(34.84)$ ], amplitude [ $\mu=98.04(33.77)$ ] and measure of robustness [ $\mu=.61(.13)$ ]. After chemotherapy, they dropped 7-17%: mesor [ $\mu=111.26(26.56)$ ], amplitude [ $\mu=87.62(24.76)$ ], and measure of robustness [ $\mu=0.57(.11)$ ]. The intervention group had significantly higher daily amplitude both at baseline and after chemotherapy and no significant group effect was observed [ $F(1,81)=2.24, p=.14$ ]. Baseline PFS was related to PSQI ( $r=.34, p<.001$ ). Day +3 fatigue was inversely correlated with daily amplitude ( $r=-.30, p=.05$ ) and with goodness of fit ( $r=-.343, p=.03$ ). Only amplitude was found to be different between the two groups; higher fatigue was associated with poorer subjective sleep. After chemotherapy, higher fatigue is associated with less robust day and night circadian rhythms. Short-term will be compared to long-term results of BSI on reducing fatigue and maintaining quality sleep.

## 248

THE EXPERIENCE OF A SAMPLE OF CANADIAN MEN WITH BREAST CANCER. Edith Pituskin, RN, MN(C), Cross Cancer Institute, Edmonton, Canada; Kris Martin-McDonald, RN, PhD, and Beverly Williams, RN, PhD, University of Alberta, Edmonton, Canada; and Heather-Jane Au, MD, PhD, Cross Cancer Institute, Edmonton, Canada.

Breast cancer is the most frequently diagnosed malignancy in Canadian women, accounting for about 30% of all new cancer cases each year. Male breast cancer is less common and accounts for less than 1% of all breast cancer cases. However, recent reports indicate male breast cancer rates are increasing in North America. Research suggests that men diagnosed with breast cancer experience serious psychologic issues including feeling less masculine by having a woman's disease, feeling isolated with a rare malignancy and feeling uncomfortable seeking or receiving support. There have been numerous large-scale studies examining women's' experiences with breast cancer. To date, there has been no North American study examining what a man experiences with a breast cancer diagnosis.

The objective of this qualitative study was to determine the experiences of a sample of Canadian men diagnosed with breast cancer.

As little is known about a man's experience with breast cancer, an exploratory qualitative approach was employed. Narrative methods were utilized to explore the meaning of the experience from the perspective of the respondent.

After ethics approval, an invitation letter and consent form were mailed to individuals listed with 'breast cancer', 'male', and 'alive', in the Alberta Cancer Registry. 20 men responded indicating their interest. After written consent, audiotaped interviews were conducted.

Great variability was found among the participants with respect to with whom they disclosed their diagnosis, how they viewed their masculinity after a breast cancer diagnosis and their views on life after a cancer experience. All participants stated that there was a major lack of awareness about male breast cancer, both in the public and health professional domain. All participants identified a lack of written information specific to men with breast cancer. All participants denied interest in traditional 'support' groups, but would have welcomed the opportunity to speak with a man who had gone through similar diagnosis and treatment.

Implications: Needs identified by the respondents include increased medical and public awareness of male breast cancer as well as specific written information. Further nursing research is necessary to identify supports and resources helpful for male patients.

## 249

WHAT IS THE LIVED EXPERIENCE FOR CAREGIVERS 6-18 MONTHS POST ALLOGENEIC TRANSPLANTATION? Frank Brown, RN, BSN, OCN®, MS(c), Roswell Park Cancer Institute, Buffalo, NY.

Each year, over 100,000 individuals face unexpected Hematological malignancies with the high potential of life threatening consequences. In many cases, stem cell transplantation is the only curative chance for survival. Stem cell transplantation is a challenging prospect, not only for the patient, but also for the family/significant other caregivers that will be a part of this journey. Caregivers play a key role from the moment the treatment plan is begun, to follow-up after transplant and potentially many years beyond during survivorship.

Since there are a limited number of research studies focusing on caregivers' experiences with stem cell transplantation, this phenomenological, qualitative research study examined the lived experience of caregivers 6-18 months post allogeneic stem cell transplantation.

The purpose of this study was to explore the lived experience of caregivers for patients 6-18 months post allogeneic stem cell transplantation. The findings of the study will be utilized to develop strategies to meet the needs of these caregivers and to help them to successfully carry out the various responsibilities they face in the crucial role they play in the patient's care following allogeneic stem cell transplantation.

The theoretical framework that was used for this study is the theory of Human Caring(1999) by Dr. Jean Watson.

Purposeful sampling was utilized to recruit six caregivers who voluntarily consented to participate in the study. Data were collected via semi-structured, audiotaped interviews, which were then transcribed verbatim. Colaizzi's method was utilized throughout data collection and analysis to identify themes that depicted the essence of the lived experience of caregivers.

The data clearly demonstrated that the caregiving experience had a significant impact on the lives of these caregivers. Six preliminary themes emerged during the initial data analysis: "Life changes in an instant"; "Obligation to become the caregiver"; "Managing worries and uncertainties"; "Responsibilities to keep the recipient alive"; "Multifaceted role"; and Feeling good about being able to help.

## 250

FUNCTIONAL STATUS AND PHYSICAL ACTIVITY IN WOMEN WITH METASTATIC BREAST CANCER (MBC). Bridget Coyne, MSN, CRNP, and Margaret Rosenzweig, PhD, CRNP, AOCRN, University of Pittsburgh School of Nursing, Pittsburgh, PA.

Exercise has been shown to decrease fatigue, and improve functionality in patients undergoing adjuvant breast cancer treatment. MBC is shifting to a chronic disease model with resultant implications for maintaining functionality, an ONS research priority. Little is known about the physical functionality of women with MBC.

To examine and measure the functional status and daily physical activity in women with MBC.

The Levine Conservation Model guided the assessment of overall energy, and structural, personal and social integrity.

A cross sectional descriptive study utilizing a mailed survey of two questionnaires assessing functional status and self-report physical activity in women with MBC from a large urban cancer center. One hundred and twenty five (N=125) women with MBC were identified via a HIPPA compliant database. The Inventory of Functional Status-Cancer (IFS-CA) measured multi-dimensional functional status. The Activity Assessment, an open ended questionnaire assessed daily physical activity. Retrospective chart review measured fatigue by self report checklist at most recent office visit.

Data collection was from July 2005 through September 2005. Fifty-two of 125 (42%) subjects returned the survey. Mean age 56.5 years, (range 45-81). Mean MBC survival was 33 months (range 1-148). Visceral metastasis (liver and lung) was present in 58% (N=32) of all subjects, with 75% (N= 39) undergoing chemotherapy.

Total IFS-CA mean score was 87 (range 32-172). Majority of subjects are "most" or "all of the time" able to maintain/participate in social/community activities, household/family work, and occupation. However, deficits were noted in personal care with most, 67% (N= 35) of the respondents sometimes or most of the time requiring rest or sleep during the day while 48% (N=25) never or seldom walk as much as usual. Major

physical activities were walking (68.6%, n=35) and gardening (39.2%, N=20). Chart review indicated that 60% (N= 29) of the respondents noted fatigue.

Despite advanced disease, this cohort of women with MBC maintained functionality in all aspects of daily life. Conversely, these women reported fatigue and required periods of rest through the day. The degree of distress associated with maintenance of functionality was not assessed.

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**FACTORS CONTRIBUTING TO MAINTENANCE OF USUAL ACTIVITIES DURING RADIATION THERAPY.** Patricia Poirier, PhD, RN, AOCN®, St. Vincent Hospital, Worcester, MA.

Cancer treatment may impact the ability of patients to maintain their usual activities such as work, household chores, and social activities.

Self-management and performance status are priority topics for the 2003-2005 ONS Research Agenda. The purpose of this study was to examine factors related to maintenance of usual activities during radiation therapy.

The role performance mode of the Roy Adaptation Model guided the design of the study, the selection of variables, and the specification of the relations among variables.

Seventy-seven participants receiving radiation therapy were recruited from one community hospital. The study employed a prospective, longitudinal design. Participants were asked to rate the extent to which they were continuing to perform their usual activities on a scale of 0 (not at all) to 10 (all the time). Karnofsky Performance Status Scale (KPS) was used to measure performance status. Data were collected at baseline prior to starting radiation, weekly during treatment, and at one month post-treatment.

The study consisted of repeated observations over time for the same set of participants; thus longitudinal regression analysis was used to capture changes with time as the single within-subjects factor. Paired t-tests were used to test for significant differences in usual activities at each measurement point.

Study participants maintained relatively high performance status throughout the course of treatment. However, the ability to perform usual activities decreased significantly from baseline to the end of treatment  $t(76)=7.45, p<.0001$ . Ability to perform usual activities was highly negatively correlated with fatigue and site-specific side effects at each measurement point. In a longitudinal regression analysis, work, availability of sick leave benefits, living situation, fatigue, KPS, and presence of co-morbidities were predictive of ability to perform usual activities throughout the trajectory of radiation therapy. Management of side effects of treatment, including fatigue, and supporting patients' need to work or not work during treatment may help patients continue to perform those activities important to them during radiation therapy. Nurses can identify patients at high risk for inability to maintain usual activities, such as those who live alone or have co-existing medical conditions, and intervene early on in treatment.

## 252

**OUTPATIENT NURSES' PERCEPTION OF CHEMOTHERAPY HANDLING RISKS.** Susan Martin, RN, DNSc, AOCN®, Sumart Healthcare, Long Beach, NY.

Within the occupational health literature, risk perception has been examined and well-documented work with regard to healthcare workers' risk perception and HIV disease. In addition, compliance with the use of protective equipment has been positively correlated with perception of risk. A serious absence in the healthcare literature relates to the effects of risk perception upon exposure and behavior as it relates to hazardous substances such as hazardous drugs. At present, the healthcare literature lacks any documentation of the effects of risk perception on the handling by healthcare workers of chemotherapeutic, radioactive isotopes, and other biological agents.

The purpose of this study is to the perceived risk of handling hazardous agents among oncology nurses in the outpatient and office based setting.

This study utilizes the Model of Precaution Adoption Process developed by Neil Weinstein, an ecological psychologist. This model describes a continuum of movement through five distinct stages that climaxes in the adoption of protective behaviors (Weinstein, 1987). The five distinct

stages include: the level of knowledge regarding the hazard, the belief that the hazard may cause significant harm to others, acknowledgment of personal susceptibility, the decision to take action, and finally, taking precaution (Weinstein, 1988).

Design: Descriptive-correlational.

Setting: National based survey of oncology nurses.

Sample: A randomly selected sample of 500 members of the Oncology Nursing Society who identified their work environment as office, clinic, and outpatient private practice based.

Data Collection: A survey instrument was developed based on the current Occupational Safety and Health Administration's Handling of Hazardous Drugs Guidelines. This survey was mailed to sample participants.

Data Analysis: Descriptive statistics to characterize the perception of risk was summarized. Differences in selected practices by practice size; geographic area, nursing experience and other variables was analyzed using the chi square statistic for categorical data and ANOVA for continuous variables.

Overall, 57.3 % reported that they perceived that handling hazardous drugs posed minimal or no risk to health. Perception of risk is an important factor in determining adoption of precautions. These results contribute to the knowledge base related to the use of personnel protective equipment during hazardous drug handling.

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**HEAD AND NECK CANCER: TECHNOLOGY FEASIBILITY OF A SPEECH GENERATING DEVICE DURING THE POST-OPERATIVE PERIOD.** Carmen Rodriguez, RN, MSN, OCN®, AOCN®, Meredith Rowe, PhD, RN, and Ann Horgas, PhD, RN, University of Florida, Gainesville, FL.

Post-operative head and neck cancer (H&N) patients experience speech impairments that limit the ability to communicate symptoms or concerns of significance during the post-operative period. The availability of a programmable speech-generating device (PSGD) may facilitate the communication process between nurses and speech-impaired patients.

The aim of this study was to explore technological interventions to facilitate communication between Registered Nurses and post-operative H&N cancer patients experiencing voicelessness

The Process of Interpretation in Response to Voicelessness framework [Happ, 2000] was used as a framework to guide this research. Voicelessness is a construct that represents communication barriers that limit the abilities of patients to convey their needs. Interventions that enhance a voiceless patient's ability to interact with others have the potential to decrease the detrimental effects of voicelessness.

A non-experimental repeated measures design was conducted with each subject over a 4 days period. Twenty-one subjects received pre-operative teaching related to the use of a PSGD with pre-selected messages specific to symptom management reporting and basic care needs during the post-operative period. The Use of a PSGD After Surgery-Data Collection Tool was used to collect data from subjects specific to: the ability to retrieve messages upon request, accessibility of the device, the level of understanding of the clerk when programmed messages were used over the call system, and the level of understanding of the communication process by nurses with the use of the device. Subjects rated their level of satisfaction by completing the Patient Satisfaction and Usability Instrument upon completion of the study. Descriptive statistics were used to synthesize data. Repeated measures analysis was used to evaluate the effect of time on the independent variables.

Results suggest that the use of a PSGD is an intervention that facilitates the communication process for post-operative H&N cancer patients experiencing voicelessness. The correct identification of three device icons (emergency, breathing problems, and pain) and the accessibility of the device at a reachable distance improved over time. Patients reported a mean satisfaction level of 4.3 and an importance level of 4.6 (scale 1-5) with the use of the device. Study participants recommended that technology be tailored to facilitate the communication process beyond messages selection.

Funding Sources: Post-doctoral Scholar- Hartford Foundation

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**ACUTE HYPERTENSIVE CRISIS DURING INFUSION OF HEMATOPOIETIC PROGENITOR CELLS FROM MATCHED UNRELATED DONORS: IDENTIFI-**

CATION OF PREDICTIVE FACTORS AND OPTIMAL TREATMENT. Roxann Blackburn, RN, OCN®, Sergio Giralto, MD, Rima Saliba, PhD, Gabriella Rondon, MD, Joyce Fenwick, RN, BSN, MS, OCN®, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Acute hypertensive crisis during autologous hematopoietic progenitor cell (HPC) infusions using DMSO is widely reported, but the literature is silent regarding this event during infusions of HPC from matched unrelated donors (MUD). MUD-HPC infusions are often given by evening nursing staff when there is less clinical support in the hospital, and treatment varies with physician preference. Identification of predictive factors, and of optimal treatment may lead to improved outcomes.

To identify predictive factors for the development of acute hypertensive crisis and to develop best treatment pathways.

A retrospective chart review of 97 adult patients receiving MUD-HPC infusions from October 2003 - September 2004 was done.

A retrospective chart review of 97 consecutive patients receiving MUD HPC infusions was completed. Demographic, clinical and laboratory factors were evaluated for the occurrence of hypertensive crisis using regression analysis. This analysis was limited to patients receiving HPC-marrow because only 2 of 20 cases occurred among patients receiving peripheral blood stem cell infusions. Hypertension crisis was defined as SBP >160, DBP >100 or a symptomatic increases in BP of 20 mm HG > baseline

On univariate analysis, volume infused (adjusted for weight), elevated creatinine (>1.0mg/dl) and BUN levels above the median (>15mg/dl) were significant predictors. Because of high correlation between BUN and creatinine, only BUN was considered in multivariate analysis (higher precision associated with the estimate). Patients receiving high volume infusions with an elevated BUN were at the greatest risk (62%), followed by patients receiving high volume infusions and low BUN (28%), and then by patients receiving low volume and high BUN (17%). There were no cases of hypertension among the 18 patients who received low volumes and had a low BUN. Medical treatment during hypertensive episodes varied by best responses was seen with combined use of IV antihypertensive agents and diuretics. These findings suggest that volume reduction of HPC-M may decrease the incidence of acute hypertensive crisis during MUD infusions.

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SLEEP MANAGEMENT PROGRAM TO REDUCE SLEEP DISTURBANCES DURING MELANOMA TREATMENT: A PILOT FEASIBILITY STUDY. Eilyn Matthews, PhD, RN, AOCN®, CRNI, University of Colorado at Denver and Health Sciences Center, Denver, CO; Maude Becker, RN, MS, and Susan Dollarhide, RN, MPA, University of Colorado Hospital, Melanoma Clinic, Denver, CO; Regina Fink, PhD, RN, FAAN, AOCN®, and Jamie Poust, PharmD, University of Colorado Hospital, Denver, CO; and Rene Gonzalez, MD, University of Colorado Hospital, Melanoma Clinic, Denver, CO.

Persons with cancer experience a wide variety of sleep-wake disturbances including sleep loss and excessive sleepiness that affect physical and psychosocial functioning, mood, symptom distress, and quality of life during diagnosis, treatment, and for an extended period after active treatment. Studies show the effectiveness of cognitive-behavioral interventions in treating insomnia and improving sleep-wake disturbances.

The study purposes are 1) to describe sleep characteristics in persons undergoing treatment for Stage III Melanoma, 2) test an intervention to improve sleep and 3) determine the feasibility of conducting a large scale randomized trial. The specific primary objectives include: 1) describe patterns of sleep the sample during two cycles of treatment, using quantitatively (e.g., sleep latency, sleep efficiency, wakefulness after sleep onset, total rest, feelings on arising, nighttime awakenings, and daytime naps) and psychological variables (i.e., subjective quality of life [QOL], anxiety and depression, 2) compare the intervention with standard care group in terms of sleep-wake and psychological variables. The secondary objectives include 3) evaluate the feasibility of actigraphy use in a larger randomized trial of melanoma patients receiving chemotherapy and biotherapy treatment, and 4) determine the effect size for the intervention.

The Two-Process Model of Sleep Regulation (Borbély & Achermann, 2000) provides a conceptual framework.

The study design is sequential cohort, repeated measure, experimental with a descriptive-exploratory qualitative component. The sample consists of 20 men and women, aged 18-65, diagnosed for the first time with stage III melanoma, have planned treated with chemotherapy, interleukin and

interferon alfa, able to complete written surveys and wear an actigraphy wristwatch. The first ten participants receive standard care; the next ten receive cognitive behavioral therapy. The first phase of data analysis includes frequency distributions and descriptive statistics for all variables on the entire sample and by group (intervention and standard care). The second phase of analysis will test for equality of means using repeated measures ANOVA since subjects are measured over time under different conditions (intervention and standard care) over time. To describe the full nature of sleep disturbances, qualitative data will be collected after two cycles of treatment via semistructured interviews. Interviewing and recruiting of new participants will continue until no new themes emerge from the data.

Data collection is in progress; results to be reported later.

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A STUDY OF TASTE CHANGE STRATEGIES IN PATIENTS RECEIVING CHEMOTHERAPY. Maureen Rehwaldt, RN, DNSC, Midwest Palliative and Hospice Carecenter, Glenview, IL; Sandy Purl, MSN, RN, AOCN®, Lutheran General Oncology Specialists, Park Ridge, IL; Joseph Tariman, RN/APN, MN, APRN, BC, OCN®, Northwestern University Medical Center, Chicago, IL; Carol Blendowski, RN, MS, OCN®, and Susan Shott, PhD, Rush University Medical Center, Chicago, IL; and Rita Wickham, RN, PhD, AOCN®, Rush University College of Nursing, Chicago, IL.

Chemotherapeutic agents have a wide range of adverse symptoms. One symptom that may be overlooked as an important symptom by oncology nurses and physicians are taste changes experienced by some cancer patients during chemotherapy. Studies have substantiated that cancer patients experience significant taste changes and are able to manage these changes with a variety of interventions, most of which are not research-based. Documentation of these interventions is necessary in order to determine the impact and to provide needed information to patients to manage this symptom.

This study examines the strategies patients use to relieve taste changes associated with chemotherapy and to describe other factors related to taste changes.

Orem's Self Care Theory is the conceptual framework that guides this study.

This multi-site study of ambulatory cancer patients undergoing chemotherapy has a quasi-experimental, pre post design. Patients who had experienced taste changes were given an initial survey developed for this study to assess different taste changes as well as interventions patients may have tried. An educational session was then given on specific suggestions to manage taste changes. At the second visit, patients were again assessed for different taste changes and specific suggestions they used. Nonparametric statistical methods with a 2-sided 0.05 significance level were used for analysis.

42 subjects completed at least 1 questionnaire. 83% were female. The majority of patients had breast cancer, followed by lung, ovarian and other cancers. The most common taste changes were metallic taste, no sense of taste, and bitter taste. Most patients reported that taste changes affected their ability to eat. The most helpful suggestions were: avoiding foods with strong smells/taste; marinating meat; eating smaller, more frequent meals; eating more bland foods; eating more flavored protein foods; using more salt; brushing teeth before eating; drinking more water with food; using more condiments; increase use of seasoning/spice. Patients receiving Cytoxan found use of condiments to be more helpful than did patients receiving carboplatin. Findings suggest that oncology nurses can inform patients about taste changes that may occur during chemotherapy and recommend specific self-care strategies before patients begin chemotherapy which will lessen the severity of taste changes and support patient's satisfaction with their own self-care.

Funding Sources: 2001 ONS Foundation Small Research Grant

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SYMPTOM CLUSTERS AND SYMPTOM DISTRESS IN PERSONS WITH ADVANCED CANCER. Susan Mcmillan, PhD, ARNP, FAAN, University of South Florida, Tampa, FL; Maria Coiro, PhD, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL; and Brent Small, PhD, University of South Florida School of Aging Studies, Tampa, FL.

Although attention has been focused on investigating the effects of single symptoms such as pain and fatigue, less attention has been paid



to how these symptoms interact and appear in clusters in some patients. Further, it is not known to what extent these symptom clusters have a synergistic effect on patient distress and quality of life.

The purpose of this study was to evaluate symptom clusters in persons with various types of advanced cancer.

#### Theory of Unpleasant Symptoms

Participants consisted of 299 (M age = 70.8 years, 40.1% Female, 12.3 years of education) home hospice patients with advanced cancer. The Memorial Symptom Assessment Scale (MSAS) measured the presence and distress of the symptoms. To be included in the analyses, patients had to report distress on at least one symptom. Latent Class Analysis was performed to examine whether separate clusters of patients could be extracted based upon MSAS distress ratings.

The results indicated that a 3-cluster solution fit the data best and included a low distress (Class 1,  $n = 185$ , M rating = 1.02) and two moderate distress groups (Class 2,  $n = 59$ , M = 1.88; Class 3,  $n = 55$ , M = 55). Fatigue, dry mouth, and pain were rated as the most distressing symptoms by all classes. Persons in Class 1 rated dyspnea and loss of appetite, persons in Class 2 endorsed nausea and vomiting, and persons in Class 3 rated worrying and loss of appetite as the next most distressing symptoms. Persons in Class 1 were significantly younger ( $p < .001$ ) and were more likely to be male ( $p < .01$ ). Finally, there were differences in the patient cancer diagnoses across the three classes of patients. The top three cancer diagnoses in Class 1 were lung (37.3%), colon (19.5%), and breast (5.9%). For Class 2 the top three diagnoses were lung (18.6%), pancreas (15.3%), and colon (13.6%), and for Class 3 were lung (40.0%), prostate (9.1%), and breast (7.3%). Clear differences were found in symptoms that clustered by cancer diagnosis. These differences deserve further study and increased attention from oncology nurses in clinical settings.

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**SYMPTOM CONCERNS AND QUALITY OF LIFE IN BREAST AND PROSTATE CANCER SURVIVORS RECEIVING HORMONAL AGENTS.** Gloria Juarez, RN, PhD, Betty Ferrell, RN, PhD, FAAN, Przemyslaw Twardowski, MD, and Virginia Sun, RN, MSN, City of Hope National Medical Center, Duarte, CA; and Gwen Uman, RN, PhD, Vital Research, LLC, Los Angeles, CA.

This research addresses a priority topic identified by ONS of the understudied hormonal disturbances and the impact on quality life.

The aim of this study is to describe the patient's perspective of having multiple symptoms associated with hormonal cancer treatment and the impact of these symptoms on quality of life (QOL).

A QOL model (Ferrell and Grant) formed the theoretical underpinnings for this study

This pilot descriptive longitudinal design evaluated the impact of hormonal therapy (HT) at 3 points in time on 15 patients diagnosed with stage I, III or III breast (7 subjects) or prostate cancer (8 subjects). Descriptive and non parametric statistics were used. At least 50% of the subjects reported problems with sexual interest or activity, pain, worrying, or lack of energy prior to hormone therapy (HT). After one month of HT over 50% of the subjects reported hot flashes (93.3%), lack of energy (73.3%, up from 50% before therapy), pain, and sweats. After four months of HT, over 50% of the subjects reported hot flashes (86.7%), lack of energy, sweats, problems with sexual interest or activity, pain, and worrying. Prior to hormonal therapy overall QOL was 7.21 (0= good to 10= worst). No significant changes in QOL were reported at 1 month and 4 months post HT (6.70 and 6.61, respectively). The physical domain subscale showed the worst outcomes at the 3 points in time,

Patients reported multiple distressing symptoms related to symptom severity and limitations. Assessment of multiple symptoms is recommended and the impact of these symptoms on QOL should be evaluated. The data demonstrated the need for further research, assessment of symptoms, and intervention across each of the quality-of-life domains. The multidimensional needs of breast and prostate cancer survivors emphasize the need for interdisciplinary collaboration.

Funding Sources: AMGEN

## 259

**FATIGUE, SLEEP DISTURBANCES AND DEPRESSIVE SYMPTOMS IN OLDER WOMEN WITH BREAST CANCER: AN INTERVENTION STUDY.**

Judith Payne, PhD, RN, AOCN®, and Joanne Held, BSN, Duke University School of Nursing, Durham, NC.

**Significance and Background.** Breast cancer is a major problem in our growing geriatric population. The disease is more common in older women. Older women with breast cancer are likely to require additional treatment following surgery, such as hormonal therapy, and to experience treatment-related side effects. Research suggests that exercise may be beneficial in reducing fatigue, and improving sleep and depressive symptoms.

**Purpose.** Evaluate the effectiveness of an exercise intervention in reducing fatigue and improving sleep and depressive symptoms in older women with breast cancer receiving hormonal therapy. The study also examined associations that may exist between cortisol and these symptoms.

**Conceptual Model.** The conceptual model guiding this study includes biobehavioral components related to the symptoms of fatigue, sleep disturbances, and depression.

**Methods & Analysis.** Older women receiving hormonal therapy for breast cancer and experiencing fatigue were randomized to either a home-based walking exercise group or to a usual care comparison group ( $n = 20$ ). Instruments included a demographic questionnaire, Piper's Fatigue Scale (PFS), Profile of Mood States (POMS), Center for Epidemiological Studies of Depression Scale (CES-D), and the Pittsburgh Sleep Quality Index (PSQI). Cortisol levels were drawn at one and three months.

**Findings and Implications.** Subjects experienced fatigue levels and sleep disturbances similar to or above levels experienced by women receiving chemotherapy. Results indicate that the exercise intervention significantly decreased scores on the PSQI ( $z = -3.10$ ;  $p = 0.002$ ). Whereas the mean PSQI did not significantly change in the control group ( $b = 1.5$ ;  $p = 0.30$ ), the mean PSQI score decreased by 4.4 points for those in the intervention group ( $b = 4.3$ ,  $p < 0.01$ ). Although cortisol levels were not significant ( $p = 0.19$ ), there was a suggestive downward trend in the intervention group. Implications: findings suggest that older women with breast cancer receiving hormonal therapy experience fatigue, sleep disturbances, and depressive symptoms. Exercise is a feasible intervention that may improve sleep disturbances in older women with breast cancer. Clinicians need to include these symptoms in their assessment, and develop interventions tailored to older adults.

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**CLINICAL AND PATIENT PERSPECTIVES ON FACTORS CONTRIBUTING TO NAUSEA IN ADVANCED CANCER.** Patsy Yates, PhD, RN, Queensland University of Technology, Kelvin Grove, Australia; Alexandra Clavarino, PhD, and Geoffrey Mitchell, PhD, MBBS, University of Queensland, Brisbane, Australia; and Peter Hudson, PhD, and Karen Quinn, Centre for Palliative Care, Fitzroy, Australia.

Nausea in advanced cancer is difficult to evaluate due to its multiple potential causes. Limited attention has been given to understanding nausea in this population.

1. To describe the patterns of nausea in advanced cancer patients
2. To identify factors associated with nausea in advanced cancer patients'

#### UCSF Symptom Management Model

Structured interviews with consecutively recruited advanced cancer patients from five inpatient and community palliative care services. A corresponding Clinical Assessment Tool was completed by each patient's physician or CNS. Eligible patients: had advanced cancer; were over 18 years; able to complete a brief questionnaire; had experienced nausea in the past week.

Two tools were developed from a systematic literature review and themes emerging from qualitative patient and health professional interviews. (1) Clinical Assessment Tool: Clinicians completed a checklist to indicate which of 19 factors were contributing to a patient's nausea. (2) Patient Interview: Patients completed a structured interviewer administered questionnaire comprising numeric rating scales to assess nausea severity and impact (0-10), and checklists to rate on a five point scale (not at all-very much) the extent to which 17 clinical, emotional and environmental factors contributed to nausea.

The nausea prevalence rate in this population was 21%. Of the 260 eligible patients, 110 (42.3%) were recruited. In the past week, mean worst nausea scores were 6.90 (SD=2.50), and average nausea scores were 4.63 (SD=2.38). 11 of the 19 factors were identified by clinicians as contributing

to nausea in more than 25% of cases. The most common factors identified (in patients diagnosed with the problem) were obstruction (96%), GI malignancy (91%), constipation (90%), pain (62%), opioids (36%). 6 of the 17 factors were rated by more than 25% of patients as contributing to nausea somewhat, quite a bit or very much, including certain foods (41%), food/cooking odors (40%), medications changes (37%), stress (28%), anxiety (27%), movement (25%).

Nausea in advanced cancer has multiple contributing factors and effects. Such factors need to be identified for an effective management plan to be implemented. The development of tools that facilitate a more evidence based approach to identifying factors contributing to nausea in this population is a priority.

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**RELATIONSHIP OF FATIGUE, PAIN AND FUNCTIONAL STATUS IN PEOPLE WITH CANCER RECEIVING CHEMOTHERAPY.** Mary Lou Siefert, APRN, DNSc, AOCN®, Yale University School of Nursing, New Haven, CT.

Symptom distress from fatigue, the most commonly reported and most distressing symptom or pain negatively affects functional status and quality of life in individuals with cancer. The relationships and patterns of prevalence of the concurrent existence of fatigue and pain and functional status changes over time are not well understood. Knowledge gained from examining the relationships of concurrent symptoms and functional status over time will enhance the understanding of their relationships and patterns of occurrence.

The study's purpose was to examine the relationship of three concepts, fatigue, pain and functional status over time in a sample cancer patients receiving outpatient chemotherapy. The aims were to describe the levels of the three concepts over time and to explore their relationships with each other and with demographic, clinical, treatment and biological variables.

The Winningham Psychobiological Entropy model which proposes a complex interrelationship among fatigue and other factors including, symptoms, disease characteristics, functional status and treatments was used to guide the study. The model encourages the management of symptoms, accompanied by adequate information and support for those with symptoms.

A descriptive correlational design was used to examine the three main outcome variables, fatigue (0-10), pain (0-10), and functional status (0-4) over time of treatment in a sample of the total available population; breast cancer (n=9), colorectal cancer (n=21), lung cancer (n=21) and lymphoma (n=19). Retrospective data were extracted by the researcher from medical records in a hospital based outpatient chemotherapy clinic. Descriptive, correlational and mixed modeling methods were employed to describe the sample and examine the relationships among disease, treatment and biological variables with fatigue, pain and functional status.

Fatigue was the most frequently reported symptom; pain was rarely reported and almost exclusively by subjects with lung cancer or lymphoma in their early treatments. Fatigue and functional status impairment were highly associated over time and had similar relationships with other variables. The patterns and severity of symptoms and functional status impairment in people with colorectal cancer and lymphoma warrant further investigation. Targeted interventions for specific populations should be developed and tested to address specific patterns of symptoms and functional status impairment.

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**RELATED FACTORS, LIFESTYLE BEHAVIORS AND MENOPAUSAL SYMPTOMS IN BREAST CANCER PATIENTS DURING ENDOCRINE THERAPY.** Midori Kamizato, RN, PHN, PhD, Nagoya University, Nagoya City, Japan.

There are limited data on the factors associated with menopausal symptoms, lifestyle behaviors, and other factors.

The purpose of this study was to examine the relationship between menopausal symptoms and lifestyle behaviors and other variables in breast cancer patients.

Symptom Management Model.

Methods: A descriptive and cross-sectional design was employed at two cancer hospital in Japan. The subjects were 162 convenience samples aged 40-65 years for women with breast cancer during endocrine therapy. Breast cancer patients completed a self-report questionnaire after giving informed consent. The main instruments were the Simplify Menopausal

Index (SMI), the Center for Epidemiological Studies Depression Scale (CES-D), researcher-developed lifestyle checking sheet and demographic data. For the analysis, we divided the subject into 2 groups by menopausal severity. Multiple logistic analysis was performed to identify related factors of menopausal severity.

Results: Breast cancer patients who had severity menopausal symptoms were significantly associated with under 50 years old, no period, having stress or depression, high cholesterol, however, not associated with diet or excise. According to the logistic regression analysis focusing on factors which had effects on menopausal symptoms, the odds ratio were as follows: under 50 years old (3.93), no period (5.37), total cholesterol (1.01), stress (1.87).

Conclusion: From the results of this study, nurses can understand the menopausal symptoms by patients' background and their physical conditions. Nurses need give this information and support their self-care behaviors for breast cancer patients.

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**QUALITY OF LIFE, SYMPTOMS OF ANXIETY AND DEPRESSION, AND REHABILITATION NEEDS OF PEOPLE RECEIVING CHEMOTHERAPY FOR CANCER AT THE INITIATION OF CHEMOTHERAPY AND THREE MONTHS LATER.** Thorunn Sævarsdottir, RN, MS, Landspítali University Hospital, Reykjavík, Iceland; and Nanna Fridriksdottir, RN, MS, and Sigridur Gunnarsdottir, RN, PhD, Landspítali University Hospital, University of Iceland, Faculty of Nursing, Reykjavík, Iceland.

The diagnosis and treatment of cancer is known to affect quality of life (QOL). Therefore, QOL has become an important focus of both oncology nursing practice and research.

To describe QOL, symptoms of anxiety and depression and rehabilitation needs, over time, in a group of Icelandic cancer patients receiving chemotherapy.

The study focuses on the five QOL dimensions measured with the CARES-SF- Physical, psychosocial, marital, sexual and medical interaction dimensions-, as well as on symptoms of anxiety and depression.

The study is prospective, descriptive and longitudinal. The sample is a convenience sample of cancer patients initiating chemotherapy protocol for newly diagnosed, progressive or relapsing cancer.

Participants completed the Icelandic version of CARES-SF (Cancer Rehabilitation Evaluation System, Short Form), HADS (Hospital Anxiety and Depression Scale), and a short demographic questionnaire at the initiation of chemotherapy (T1) and three months later (T2). Data analyses were performed with SPSS version 11.0 for Windows, using descriptive statistics and inferential statistics. Significance level was set at  $p < 0.05$ .

QOL measured with the CARES-SF was significantly poorer three months after initiation of chemotherapy. QOL was poorest in the sexual and the physical dimensions, at both time points. Demographic and disease variables were not significantly related to QOL, with the exception of age. Older people experienced better QOL. Significantly more participants had scores suggesting symptoms of depression on the HAD-D scale at time 2. Symptoms of anxiety and depression were negatively correlated with quality of life.

The participants had an average of 3.3 (5) rehabilitation needs at the initiation of chemotherapy, and 2.97 (5.7) after three months, (range 1- 25 and 1-29 needs per patient respectively). The difference was not significant.

QOL of people receiving chemotherapy for cancer is affected over time. Those participants who experienced symptoms of anxiety or depression experienced significantly poorer QOL. Nurses need to be attentive to changes in their patients QOL and particularly of issues concerning physical and sexual health. Patients receiving chemotherapy should have QOL assessment performed on a regular basis.

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**FREQUENCY OF URGENT/EMERGENCY SYMPTOMS ASSESSED BY TRIAGING NURSE FOR ONCOLOGY PATIENTS SEEKING TREATMENT AT A COMPREHENSIVE CANCER CENTER.** Dennis Graham, RN, NP, OCN®, and Joan McKerrow, RN, MPH, Memorial Sloan-Kettering Cancer Center, New York, NY.

Significance and Background: The frequency and types of nursing assessments for urgent/emergency problems for oncology patient has not been widely reported in the literature. Oncology patient can present

for treatment with medical or surgical urgent/emergency issues related to systemic effects of treatments or the natural history of their primary or metastatic tumor. Additionally, emergencies may be unrelated to the type of cancer including acute myocardial infarction, drug overdose, or gastrointestinal hemorrhage. Patients reporting to our Urgent Care Center (UCC) at this NCI funded Comprehensive Cancer Center during 12-8 PM Monday through Friday are triaged by the admitting nurse. The triaging nurse uses triage order sets (NTOS) approved the Medical Board and the Division of Nursing. The NTOS utilized are order sets for diagnostic laboratory examinations, radiology test and nursing interventions implemented based on the patients presenting signs and symptoms chief complaint(s).

**Purpose:** To identify the gaps in oncology nursing knowledge related to frequency and types of urgent/emergency symptoms that occur in order to assist oncology nurses to better manage and support patients during treatment.

**Method:** A retrospective review was carried out reporting the frequencies of NTOS used by the triaging nurse for patients with urgent/emergency complaints for a three-month period and these were analyzed using descriptive and chi square statistics.

**Findings:** A total of 1151 of 4910 patients were triaged by the admitting nurse using NTOS. Fever (42.6 %) was the most common presenting symptom followed by, abdominal pain (14.4%), dyspnea (13.3%), nausea/vomiting (10.8%), chest pain (7.2%), vital signs (3.4%), diarrhea (2.9%), pneumonia 2.7%, hypo/hyperglycemia (1.5%) and deep vein thrombosis (1.4%).

**Implications:** This analysis of NTOS used by the triaging nurse represents frequency of urgent/emergency symptoms reported by oncology patients at this UCC. The results of this study will be used to plan and develop nursing staff educational programs to enhance emergency care for our oncology patients and design new studies to evaluate and improve care.

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**EXPLORING SYMPTOM CLUSTER STABILITY DURING CHEMOTHERAPY.** Lillian Nail, PhD, RN, CNS, FAAN, Nancy Perrin, PhD, and Ginger Hanson, MA, Oregon Health and Science University, Portland, OR; and Charles Given, PhD, and Barbara Given, PhD, RN, FAAN, Michigan State University, East Lansing, MI.

Research on cancer symptoms has focused on single symptoms while in reality people experience multiple concurrent symptoms.

Symptom cluster research, including questions about the structure and stability of symptom clusters, is part of the current ONS Research Agenda as well as NIH's 2002 State of the Science statement on cancer symptoms. The purpose of this secondary analysis was to examine the stability of symptom cluster membership over two cycles of chemotherapy in women with breast cancer.

The conceptual framework for this project is drawn from the Symptom Management Model.

Women rated symptom severity five days after their first two cycles of chemotherapy (C1 and C2) using the Self-Care Diary. Seventy-seven of 93 participants provided data at both time points. The sample was middle-aged (mean 52 years), white (88%), and educated (50% >HS). 38% had Stage IV disease and 16% had prior chemotherapy. We used hierarchical cluster analysis with Ward's Method to explore symptom clusters at C1 and C2.

As expected, the nature of the symptom clusters changed somewhat from C1 to C2 to reflect symptoms associated with cumulative chemotherapy dose (fatigue and alopecia) and resolution of symptoms amenable to acute intervention. C1 and C2 cluster membership were related, although not significantly ( $p=.069$ ) because of low power due to small sample size in some C2 clusters. In general, those in "No Symptoms" at C1 had few symptoms at C2 (66%) and those with "Difficulty Sleeping" at C1 had sleep problems (46%) or fatigue at C2 (23%). The C1 "GI" group either experienced relief of GI symptoms by C2 and transitioned to fatigue or hair loss (50%) or developed multiple low level symptoms (22%). The most complex group at C1, "Multiple Symptoms and Pain," continued experiencing multiple symptoms (60%). The overall temporal stability in symptom cluster membership suggests an underlying propensity for individuals to experience specific symptoms consistent with speculation that biologic differences may explain individual varia-

tion in symptoms. In addition, these results demonstrate that symptom cluster membership during C1 may be helpful in identifying those at highest risk for experiencing multiple symptoms during the next cycle of chemotherapy.

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**HANDHELD SPIROMETRY AS A TOOL FOR GATHERING QUANTITATIVE RESEARCH DATA IN LUNG CANCER.** Cynthia Chernecky, RN, PhD, AOCN®, Medical College of Georgia, Augusta, GA; and William Mayfield, MD, FACS, and E. Lewis Itkin, MD, FACS, Thoracic Surgery Associates, PC, Marietta, GA.

Spirometry values (FEV-1, FVC and FEV-1/FVC%) have not been successful in differentiating values from normal subjects, COPD patients and all lung cancer patients combined. No studies have used handheld spirometry, in newly diagnosed and treatment naive patients with non-small-cell lung cancer (NSCLC), in measuring peak expiratory flow (PEF) and forced expiratory ratio (FER). Comparison of these two values, to values taken from the literature for other groups will help determine if PEF and FER values are clinically appropriate in gathering data and use in interventional evaluation. The MicroPlus (TM), handheld spirometry machine, meets/exceeds all American Thoracic Society requirements.

What are the values of five handheld spirometry tests (FVC, FEV-1, FEV-1/FVC%, PEF and FER) in newly diagnosed persons with non-small-cell lung cancer? How do these values compare to the values in the literature for norms, patients with COPD and lung cancer patients? This study addresses a gap in the literature regarding PEF and FER values and group comparisons.

This translational framework can reveal a cost effective/efficient way to gather data useful in interventional research and clinical settings.

Prospective, descriptive. Convenience sample 23, 15 males and 8 females, newly diagnosed, treatment naive, NSCLC. 48% adenocarcinoma, 39% squamous cell, 13% large cell; Stage I (N=9), II (N=6) or III (N=8). Means were used to develop comparison histograms for 5 spirometry results in patients with NSCLC and 3 other groups whose norms were found in the literature. Limitations include small sample size, different stages of NSCLC, one clinical setting and values from the literature that did not use the same handheld machine.

FVC, FEV-1 and FEV-1/FVC% means were not different in this sample from 3 other groups and this supports the literature. However, PEF and FER mean values were different in patients with NSCLC from 3 other groups. PEF is at least 100 L/minute less and FER is 8 L/second less in persons with NSCLC than all 3 groups. PEF and FER, two handheld spirometry values, could be useful from a diagnostic perspective in lung cancer screening, interventional research and clinical areas of patient care.

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**PREVALENCE AND PREDICTORS OF COMPLEMENTARY AND ALTERNATIVE THERAPIES USE BY WOMEN WITH ADVANCED BREAST CANCER.** Susan Bauer-Wu, DNSc, RN, and Abigail Gross, BS, Dana-Farber Cancer Institute, Boston, MA; and Qin Liu, PhD, University of Massachusetts Medical School, Worcester, MA.

Complementary and alternative medical (CAM) therapies use is increasingly common, particularly among cancer patients. Previous research has documented high CAM use in cancer patients primarily with early stages of disease. Information on CAM use in patients with metastatic cancer is limited, yet would be valuable in the care of these patients.

To evaluate the prevalence of CAM use over time and to examine relationships between the use of different CAM therapies and demographic characteristics among a sample of women living with metastatic breast cancer.

No particular theoretical framework guided this study.

This descriptive, longitudinal study of metastatic breast cancer patients (N=173) was a secondary analysis. All participants were receiving conventional cancer treatment. Mailed written surveys were completed at three time points over a period of six months, which assessed CAM use (specific therapies and amount of money spent monthly on nutritional or herbal supplements) and socio-demographic information. Statistical analyses included descriptive statistics and multivariate logistic regression analyses.

More than 90% of the sample used at least one type of CAM and 68% used two or more. The frequency of IT use did not change over six



months. Three-fourths used prayer or other spiritual practice on a regular basis, one-third had seen a non-traditional healer in the last three months (massage therapist, herbalist/naturopath, Reiki/energy healer, and acupuncturist), and one-fifth practiced yoga and/or meditation. Two-thirds reported purchasing vitamins and one-third herbal products, and approximately \$50 was the average monthly amount spent on these products. Statistically significant results ( $p < 0.02$ ) indicate that younger, more educated participants were more likely to go to CAM practitioners (i.e. massage therapists, acupuncturists, or herbalists) and also more likely to practice meditation/yoga in an average week versus older participants with less education. Younger participants were also more likely to use herbal products as well as spend more money on vitamins and herbal products. Given the disease and treatment complexities associated with the management of young advanced breast cancer patients, coupled with the pervasive use of CAM in these patients, information related to CAM use in these patients is of utmost importance to oncology clinicians.

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**WHEN "NORMAL" ISN'T; COMMUNICATING WITH PATIENTS ABOUT CHEMOTHERAPY INCLUDED SIDE EFFECTS.** Susan Newton, RN, MS, AOCN®, AOCNS, Ortho Biotech Oncology, Dayton, OH; and Emily Benadon, Johnson and Johnson, Raritan, NJ.

Many instruments exist for determining the impact of chemotherapy-induced anemia and related fatigue on patient quality-of-life, but there are few studies that analyze how health care providers actually discuss anemia and fatigue with patients.

Identify and analyze the language used in office visits related to: Side effects of chemotherapy.

The role side-effect management plays in the broader discussion about management of cancer and its treatment.

Differences in communication with patients between oncologists and nurses.

A linguistics study, designed to capture how people interact with their healthcare providers and report on their interactions, was conducted.

Letters of invitation were mailed to over 1,000 community-based oncologists; of these, 15 met the criteria and agreed to participate in this research study. Thirty-six of their patients undergoing chemotherapy were video- and audio-recorded during their regularly scheduled visit. Interviews were transcribed and analyzed using validated sociolinguistic techniques.

Fifty-two percent of visit time was spent discussing side effects and symptoms; of that time 60% was spent discussing hematologic issues (anemia and related fatigue, blood counts, growth factors, etc.). In spite of this, most discussions of fatigue/anemia lacked specificity and the "benchmarking" necessary to determine true impact on patients' lives. Physician inquiries regarding fatigue also tended to be too focused and brief to elicit patients' chief concerns. On average, less than 1 question/visit relating to fatigue/anemia was asked of the patient; 90% of these questions required only a yes/no answer. No fatigue-assessment instrument was used or referenced, in whole or in part, in any visit.

Recommendations: Oncology healthcare providers are encouraged to modify their vocabulary to avoid the use of the word "normal" in the context of chemotherapy-induced adverse effects. Instead, words such as "expected" should be used. Second, because none of the discussions during the study visits referenced a fatigue scale, practitioners are encouraged to consider incorporating a simple fatigue instrument with their assessment of fatigue. In addition, clinicians are encouraged to ask patients questions in 3 areas: what is the patient's current general state of being; what are the activities the patient typically engages in; and how has the patient's ability to continue to engage in these activities changed over time.

Funding Sources: Ortho Biotech

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**DEVELOPING AN ONCOLOGY PATIENT SAFETY PROGRAM.** Tracy Gosselin-Acomb, RN, MSN, AOCN®, Duke University Health System, Durham, NC.

Patient safety continues to be in the forefront of news headlines. Institute of Medicine reports, journal articles, safety campaigns and metrics have made patient safety the number one priority at healthcare institutions. In oncology care it is critical that all disciplines understand the processes that impact care as well as the role we all have in solving them.

The purpose of this safety program is to understand the culture of safety in each area, define current safety issues and trends, and develop action plans to minimize patient events.

A multi-disciplinary oncology committee was developed in early 2005. This committee has representation from clinical oncology areas, administration, as well as Six Sigma black belt representation. The committee has developed an Oncology Safety Scorecard with a variety of metrics that correspond to service line and institutional metrics. The committee serves as a resource to local oncology safety teams, assists in the data review and development of action plans, and performs safety rounds. The committee has administered the AHRQ Culture of Safety survey and will use the results to develop appropriate educational interventions. Nurses continue to work on specific projects and may work across settings as the care continuum continues to expand. Chemotherapy, falls, insulin, and opioids are current teams that are meeting.

This safety program will continue to evolve. The work of both the larger and smaller committees will continue to focus on data review as well as the development and implementation of best practices. Continued Six Sigma training will be essential in analyzing data and in making recommendations at all levels of the institution. The falls and insulin teams have already completed data analysis and are in the early stages of developing/revising clinical and educational guidelines.

This program that historically had been in the shape of local area/unit level quality assurance and quality improvement has now fully matured with communication and integration across all disciplines in oncology. The development of a comprehensive program has assisted in allocating resources and in budgeting for program needs. Ongoing development will be critical to the programs success.

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**PATIENT IDENTIFICATION: ONCOLOGY NURSES ESTABLISH SAFETY TRENDS.** Delma Polanco, RN, BSN, Hyacinth Gordon, RN, MSN, OCN®, CRRN, and JoAnn Mick, RN, MSN, MBA, University of Texas M.D. Anderson Cancer Center, Houston, TX.

In 1999, the Institute of Medicine's report To Err is Human: Building a Safer Health System, made headlines and engaged healthcare organizations in strategy development to prevent medical errors and keep patients safe. According to the report, 44,000 to 98,000 patients hospitalized in the United States, die each year as a result of medical errors. In 2004, JCAHO identified six patient safety goals to increase the accuracy of patient identification in organizations seeking accreditation. The recommendation states that patients are to be identified with at least two identifiers, when obtaining blood samples or administering medications or blood products.

Our organization revised and implemented policies to comply with the new regulations. To ensure changes in practice, we conducted a quality improvement project on our 32-bed surgical urology and orthopedic unit. As we surveyed patients initially, we found that 100% of the patients stated that nurses were not always compliant with the new safety standard to check patients' ID prior to medication administration.

Flyers/in-services on the new policies and procedures were used to educate nurses about their role in keeping patients safe. Flyers were posted in patients' rooms to notify patients and caregivers that nurses would ask patients to state their name and ID number prior to medication administration. Additionally, nurses were asked to explain our patient safety measures to patients/caregivers during the admission process. We created a "Commitment to Patient Safety" flyer to ensure that float pool and agency nurse staff were knowledgeable of our project goal to ensure compliance and promote patient safety. The flyer specified that patients should be asked to state name and ID number prior to medication administration.

Results have shown that we have reached and maintained 100% compliance with asking patients to state name and ID number prior to medication administration. We continue to survey 10-20 patients per month to maintain compliance.

Nurses are in a unique position to ensure that safety standards are adhered to at all times. They must find innovative solutions to improve patient safety and provide the highest quality care. Our poster will share our strategies and "Commitment to Safety" flyer.

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**COMPUTERIZED ORDER ENTRY: A DYNAMIC INITIATIVE FOR NURSING WITH PATIENTS ON A CLINICAL TRIAL.** Deborah Verrier, RN, BSN, and

Ellen Toomey-Mathews, RN, BSN, Dana-Farber Cancer Institute, Boston, MA; and Karen Lipshires, RN, BSN, Massachusetts General Hospital, Boston, MA.

The Chemotherapy Order Entry (COE) system is a patient-safety initiative that evolved in part to meet the ongoing challenge oncology nurses face in ensuring that patients receive safe treatment. Multidisciplinary collaboration and constant maintenance ensure that this complex ordering system serves the purpose of accuracy and compliance in a setting with many active clinical trials.

The purpose of the COE system at Dana-Farber/Partners Cancer Care (DF/PCC) is to ensure safe medication delivery by utilizing computerized ordering templates. Inherent risks to the oncology setting, such as, the medication's potentially toxic nature or the dynamic disease state of the patient, present challenges to nursing. The development of templates ensures that the rigorous methods outlined in clinical trials are clear and in compliance.

Approximately 3000 patients receive treatment on therapeutic clinical trials each year. DF/PCC developed specific computerized ordering templates detailing drug, dose, frequency, and instruction information. Collaboration with disease center nurses, pharmacists and physicians create the precise framework for each COE template. In turn the clinicians caring for the patients have safeguards in place to capture potential issues and minimize errors at the administration level for nursing. Clinical trial specific criteria for treatment, standardized side effect management, hypersensitivity reaction management and detailed drug instructions are only a few features of COE. Vigilant scrutiny of amendments as well as the ongoing maintenance intrinsic to a computerized system helps to ensure that nursing has the latest information regardless of trial phase.

The COE system has established 300 templates. Feedback regarding enhancing existing options such as the criteria for treatment and specific drug instruction only serves as testimony that safe medication practices are critical to the treatment of the patient. Determining potential errors prior to an occurrence remains a goal of the COE system.

Nursing is at the forefront of developing innovative approaches to safe delivery of therapy as well as instrumental in the development and implementation of the COE system. The complex nature of oncology patient care coupled with the intricate details of a clinical trial make computerized orders indispensable to nursing.

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**IMPROVING PATIENT SAFETY: IMPLEMENTATION OF A FALLS ASSESSMENT TOOL AND INTERVENTIONS SPECIFIC TO HOSPITALIZED ONCOLOGY PATIENTS.** Diana Karius, RN, MS, AOCN®, Christina Shane, RN, BSN, OCN®, Lynn Rush, RN, BSN, OCN®, and Margaret Hubman, RN, BSN, Cleveland Clinic, Cleveland, OH.

Little information is found in the literature regarding falls in the oncology population. Currently available falls risk assessment tools may not be the most appropriate for the oncology population since most are designed to prevent falls in the elderly. After our inpatient oncology unit experienced patient falls resulting in severe injury including one fatality, a performance improvement project was implemented.

To identify risk factors unique to the oncology patient population and implement strategies to reduce the injuries associated with falls to improve patient safety.

Methods: Through a chart review of those patients who had a fall with injury, it was identified that medications well known to increase falls risk were used frequently by oncology patients. These included benzodiazepines and anti-epileptics for the management of nausea, vomiting and the prevention of seizures. Other identified risk factors included low blood counts, depression, disease specific risks such as brain, bone, liver metastasis and treatment induced mental status changes including chemotherapy and fever. Our current falls risk assessment tool did not specifically address these pertinent issues. In addition, patient education regarding oncology specific risk factors did not occur until after the patient had fallen. Interventions: A multidisciplinary team was assembled. All risk factors were reviewed and it was determined that a more selective assessment tool was required and that education needed to be more proactive. The Hendrich II tool was selected. Posters were created and posted in all patient rooms to alert them and their family members of the risk of falls. An education sheet was created and added to the admission packet. All patients and families were educated about falls risk and interventions to

decrease risk upon admission. Pharmacy daily reviews medication profiles for high-risk medications and physical therapy reviewed the fall risk documentation of the nurses. Prevention strategies are collaborative.

The number of falls decreased from 48 in 2003 to 37 in 2004. The number of falls in 2005 remains stable. More importantly, there are no falls with severe injury at this time.

The data supports that improved assessment and education increase patient safety.

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**CHEMOTHERAPY ADMINISTRATION ON NON ONCOLOGY UNITS: PROMOTING QUALITY AND SAFETY.** Ellen M. Fitzgerald, MSN, RN, Susan M. Finn, MSN, RN, AOCNS, and Joanne Empoliti, MSN, RN, BC, ONC, Massachusetts General Hospital, Boston, MA.

The majority of chemotherapy administration now occurs in the ambulatory setting. However, some patients still receive their chemotherapy while hospitalized. Staff on the oncology specialty units have received specific training in the care of patients receiving chemotherapy. The challenge faced by a large, urban teaching hospital was how to provide the same standard of care for patients who received their chemotherapy on non-oncology units.

Issues related to patients receiving chemotherapy on these units include: low volume leading to difficulty in staff maintaining competency, the variety and complexity of the regimens, public focus on quality and safety and the publicity of errors and the complexity of the environment overall. In addition, the challenge included providing support during the entire care experience and not just around the administration of the drugs.

A workgroup was convened that included staff and leadership from the oncology specialty and non-oncology areas to address this challenge. The charge of the workgroup was to develop recommendations to be used system wide to ensure patients received the same standard of care while receiving chemotherapy irrespective of their location.

The group reviewed current practices and concerns and identified ideal systems. The workgroup then developed consensus guidelines regarding criteria for patient transfer to an oncology specialty unit, reviewed the policy for staff competency in chemotherapy administration, developed worksheets for staff on low volume units with pretreatment assessment, safety in handling and post treatment care of chemotherapy patients. The group recommended creating a chemotherapy consultation team that would work with patients, families and staff on low volume units. This team would be accessed through one phone number, be available 24 hours per day, 7 days per week and be available for the actual administration of the chemotherapy as well as the supporting the ongoing care of the patient and family including education and support.

A mechanism to track patient volume and evaluate the experience of patients and families as well as staff will be discussed.

This initiative promoted the use of the same standard of care for all patients receiving chemotherapy and developed systems that supported nursing practice across units.

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**DECREASING VARIABILITY AND INCREASING PREDICTABILITY OF CHEMOTHERAPY ADMINISTRATION ON A COMBINED INPATIENT-OUTPATIENT MEDICAL-SURGICAL UNIT.** Joann Petty, RN, MSN, AOCN®, Jodi Overbeck, RN, MSN, OCN®, Catherine Wahlen-Pniewski, RN, BSN, OCN®, Elizabeth Pusateri, RN, BSN, OCN®, Paula Cozzo, BA, RHIT, CPHQ, and Elizabeth Walliser, RN, MS, CPHQ, Advocate Good Samaritan Hospital, Downers Grove, IL.

Despite the transition to outpatient care, a significant number of chemotherapy doses are still being administered in inpatient settings. In 2004, this hospital's chemotherapy certified nursing staff administered 382 doses. Integrating inpatient and outpatient chemotherapy administrations into the workflow of a busy medical-surgical unit is particularly challenging. Ad hoc anti-neoplastic administrations have a significant impact on pharmacy and nursing staffing as well as timely processing and patient safety. A team composed of two nursing staff members, the unit manager, the oncology CNS, a pharmacist, an oncologist, and two quality improvement specialists examined the current process. Historical (2004) chemotherapy data analysis revealed: (1) only 27% of inpatient chemotherapy administrations were begun before 1500; (2) it took an

average of 3.66 hours to obtain orders; (3) an additional average of 4.63 hours elapsed before chemotherapy administration.

The purpose of this unit-based multi-disciplinary process improvement project was to implement practice changes to decrease variability and increase predictability of chemotherapy administrations.

The team identified several factors affecting timely and accurate chemotherapy administration: (1) patient admission process; (2) advance notification of admissions; (3) pre-admission blood work; (4) timeliness of physicians' orders; (5) pharmacy support; (6) nursing staff assignments; (7) day of week. Specific strategies were implemented to address each of these variables. The team agreed it was important to have the majority of chemotherapy started on the day shift during which time the most resources are available, including the physician, oncology CNS and specialty pharmacist, and additional chemotherapy certified nursing staff.

Data collection began in July 2005. The primary outcome measure was the number of chemotherapy administrations begun before 1500. During the first 6 months we have already exceeded our goal of 75%.

Through multidisciplinary efforts, we have accomplished a significant streamlining and increased timeliness of our chemotherapy administration process. Initiating chemotherapy before 1500 provides the staff with access to more resources for problem solving and allows the evening and night staff to focus on patient education and symptom management.

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**CHEMOTHERAPY SAFETY INITIATIVE: EXPERIENCED NURSES LEAD THE WAY.** Patricia Friedel, RN, BSN, OCN®, and Michelle Roberts, RN, BSN, OCN®, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

Patient safety is a priority in healthcare across the United States. Safety concerns are heightened in the Oncology setting when administering chemotherapy and potentially toxic medications. In an outpatient Infusion Center, whose primary purpose is to deliver cancer therapy and related medications, concern for patient safety is paramount. This NCI Comprehensive Cancer Center developed a patient safety initiative in our busy outpatient Infusion Center to improve our chemotherapy administration safety measures and error detection. With greater than 30,000 visits to the Infusion Center annually, careful attention to safe practice by Oncology nurses is crucial.

The purpose of this project was to improve patient safety measures and error detection related to chemotherapy administration.

A chemotherapy administration safety task force consulted with our CNS, reviewed existing chemotherapy safety guidelines, and examined related safety protocols from three other NCI facilities. We revised our procedure of checking treatment orders by two RNs, to require two separate independent order checks and include the patient in the process. Patients are asked to identify his/her name on chemo/ medication labels and laboratory labels. After revision of the policy and procedure, staff and patients were educated on the new process.

These two actions added to the chemotherapy verification procedure are simple, easy, and useful strategies to prevent errors. The emphasis on "independent" reviewing of the orders has been proven to identify more errors than a double-check system in which one nurse reads aloud and the other nurse "follows along," decreasing the likelihood of "seeing what they think they hear". Oncology nurses play a key role in the error prevention and can utilize these safety measures consistently in their daily practice. By including the patient in the process, we have increased their awareness about their treatment and safety measures required to administer the medications.

Chemotherapy error-prevention strategies include a wide array of tactics from computerized order entry to human procedures. Oncology nurses can focus on reducing human error by performing an independent double-check of chemotherapy orders and including the patient in the chemotherapy identification process. Our patients have shown an interest and appreciate being involved their care.

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**SAFE CHEMOTHERAPY ADMINISTRATION IN A HOSPITAL SETTING.** Janice Beschorner, RN, MS, AOCN®, and Amy Jones, RN, BSN, OCN®, University of Chicago Hospitals, Chicago, IL.

Safe chemotherapy administration is paramount for patients. Managing complex chemotherapy and supportive care orders for the oncology patient is a nursing challenge. Nurses must be able to clearly read

chemotherapy orders, process them which includes verification of doses, and administer the drugs accurately. Additionally, documentation of the administration as well as the patient's tolerance of the side effects and interventions used to minimize those side effects is all part of safe administration. The error could be compounded in pharmacy. Additionally, supportive care orders in this population are very important to the care of these patients and it is important that oncology nurses assess that they are included with the chemotherapy orders.

The chemotherapy policy at this institution delineates the role of the physician, the nurse, and the pharmacist in the writing of the orders, the processing of the orders, and drug administration. The purpose of this poster presentation is to show our institution's process for chemotherapy. We will describe the process of chemotherapy order transcription and administration which requires two oncology RN's for the transcription and for administration. Examples of 'good catches' will be presented.

Oncology nursing practice for chemotherapy administration must include the 5 rights of medication administration, plus the checks and balances of dose calculations. Any question of the physician's orders must be addressed immediately. Chemotherapy audits are performed every week to monitor nursing compliance with the policy.

We have been able to demonstrate increased compliance with chemotherapy policy. Oncology nurses are assertive in speaking with physicians about patients who will be or who are receiving chemotherapy.

Oncology nurses must be astute practitioners when caring for patients receiving chemotherapy. They must be knowledgeable about the chemotherapy policy and utilize appropriate resources as needed to feel supported in their follow-through of the policy.

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**SAFETY ANALYSIS OF THE CHEMOTHERAPY PROCESS AND PROCEDURE FOR HOME INFUSION.** Lynda Peoples, RN, BSN, Martha Michael, BSN, RN, Janice Carsello, BSN, RN, Tim Fox, PharmD, and Brian Swift, PharmD, Thomas Jefferson University Hospital, Philadelphia, PA.

As continuous infusions of fluorouracil (5FU) have become more prevalent in the treatment of colorectal cancer, the safety risks inherent in these highly structured and burgeoning protocols have become evident. A dramatic increase in the demand for continuous 5FU from Jefferson Home Infusion Service (JHIS) prompted an examination of our chemotherapy process from referral to medication administration.

The purpose of the Failure Mode and Effects Analysis (FMEA) team was to analyze JHIS's chemotherapy process and recommend revisions designed to reduce the potential for errors. The team was comprised of nurses and pharmacists directly responsible for the care of clients requiring infusional 5FU.

The clinicians on the FMEA team evaluated the processes necessary to provide chemotherapy safely. Each step from referral to administration of chemotherapy was assigned a severity, probability, and hazard score. The group identified actions to reduce the failure potential and implemented them. Key interventions included the implementation of a standardized chemotherapy order form (including protocol name, height, weight and body surface area), a chemotherapy assessment form for nurses, a procedure for obtaining and reporting lab values, and an increased focus on client identification, as multiple clients may receive treatment from one infusion nurse in the same setting. Policies were revised to reflect these changes, and staff education and competencies were developed to ensure their consistent application.

After making recommendations to revise procedures, the team again assigned probability scores for each process, resulting in decreased probabilities for failure. Use of standardized orders and chemotherapy assessments improved nurses' ability to educate and assess clients based on their entire chemotherapy regimen, not just the 5FU component provided by JHIS. They also provide a uniform procedure for chemotherapy administration and discontinuation, consistent with ONS guidelines. The lab retrieval/communication procedure increased nurses' awareness of and ability to interpret lab values.

Oncology nurses in cancer treatment centers and home infusion agencies are keenly aware of the logistical challenges and potential for error associated with the latest treatments for colorectal cancer. The interventions taken by JHIS will enhance and improve care delivery for clients in similar health care settings.



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TURNING A CHEMOTHERAPY VARIANCE INTO A POSITIVE PRACTICE. Mary Ann Long, BSN, RN, OCN®, Gisela Stoberman, RN, BSN, Anita McCabe, RN, Pamela Wieslo, PharmD, and Merima Nokic, RN, AAS, Roswell Park Cancer Institute, Buffalo, NY.

Chemotherapy is a mainstay for treatment of a wide range of oncological conditions. Chemotherapy agents are high-risk medications that can cause significant toxicities, adverse reactions and side effects. At Roswell Park Cancer Institute, a chemotherapy variance (at RPCI, a medication error is defined as a variance to foster a non-punitive environment for reporting occurrences) occurred that prompted a review of the entire process of chemotherapy administration.

Because chemotherapy administration is complex, labor-intensive, and is administered in multiple areas in the Institute, a chemotherapy taskforce was formed with staff from many areas of the Institute where chemotherapy is administered to review the specific medication variance and current practice.

The chemotherapy taskforce had 3 main goals: 1) investigate the variance and contributing factors 2) determine best practices for chemotherapy administration and 3) standardize the entire chemotherapy process for the Institute.

Determine the impact of the new standards on medication variance rates related specifically to chemotherapy at Roswell Park Cancer Institute.

Because patients at Roswell Park Cancer Institute may receive chemotherapy in both inpatient and ambulatory settings, it is necessary to have a standardized approach to the entire process. The development of the new procedures has provided the nursing staff involved the opportunity to examine available evidence and develop a consensus for best practice in this setting. This approach fosters participation for patients because it affords a consistent method of administration despite location.

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FROM PAPER TO ELECTRONIC: A HOSPITAL'S JOURNEY TO IMPROVE CHEMOTHERAPY ADMINISTRATION DOCUMENTATION AND PATIENT SAFETY. Mina Ford, RN, MSN, OCN®, Martha Jefferson Hospital, Charlottesville, VA.

Over the past five years, Martha Jefferson Community Hospital has been in the process of transitioning to a paperless documentation system. Electronic chemotherapy documentation forms were created with the goals to improve documentation and patient safety.

The goals of the interdisciplinary team were to make charting more accessible to the nurses, to improve the consistency of documentation of chemotherapy administration hospital-wide, to have quick and easy access to patients past experiences with chemotherapy, and to improve the safety of chemotherapy administration throughout the hospital.

The team developed three separate forms: chemotherapy pre-administration, chemotherapy post-administration, and chemotherapy double-check. All forms can be viewed by nurses, pharmacists, and physicians. This allows better access to patient information. The forms have required fields so nurses are unable to sign the forms until all areas are complete which ensures more complete documentation. The forms also have the ability to contain a large amount of reference text that was used to pull out pieces of hospital policy and procedure as quick references. This aspect allows the form not only to record data, but to educate the nurses as well. An additional section was added to monitor the patients' response to the chemotherapy that allows everyone the ability to review patients past experiences with chemotherapy and their responses. Sections for adverse drug reactions and education are also available in the form so nurses do not have to open another form.

In-services and a tutorial will be available for all staff when the forms are implemented. Team members will work with the staff if any problems develop and a survey will be sent three months after the forms are implemented for staff feedback.

The task to switch a paper form to an electronic form could have been a simple conversion from paper to computer. The team took this opportunity to improve not only the information contained in the form, but also looked at ways to improve the administration process and patient safety.

## 280

CREATIVE COLLABORATION OF ONCOLOGY NURSING LEADERSHIP RESULTS IN COST EFFECTIVE ONCOLOGY NURSING EDUCATION. Jean

Ellsworth-Wolk, RN, MS, AOCN®, Lakewood Hospital, CCHS System, Lakewood, OH; and Molly Loney, RN, MSN, AOCN®, Hillcrest Hospital, Mayfield Heights, OH.

In this era of continued shrinking health care resources in terms of money and personnel, the clinical oncology leadership of one large Midwestern health care system has developed a cost effective program delivering quality oncology nursing education to oncology nurses within its system.

The purpose of this collaborative group is to provide excellence in oncology care across a large health care system.

In response to a need to educate large numbers of oncology nurses across a multi hospital system in chemotherapy/biotherapy administration and little administrative support in terms of money, a group of clinical oncology leadership personnel from 9 institutions came together to develop a plan. They solicited funds from pharmaceutical companies and partnered with ONS to become ONS Chemotherapy/Biotherapy trainers through a special instructional session at a central local institution. They then developed a system of rotating coordination of the course as well as sharing the teaching load. To date the group has educated 256 clinicians in Chemotherapy and Biotherapy administration and presented 2 OCN® review courses to 100 participants. The group has evolved into an Oncology Education and Practice Council, (OEPC) and has developed a committee structure, mission statement, goals, and an agenda for the future and is now seeking to strengthen its administrative foundation. Besides the pooling of resources and diverse talents, other benefits of this collaborative effort include networking and strengthening ties between community and tertiary centers, informal mentoring, integrating evidenced based nursing practice, and establishing nursing competency standards

The OEPC has successfully built a strong foundation for oncology nursing education and practice within this health care system without an administrative budget. This group's future goal will be to grow opportunities for continued success with the mission of providing evidence based nursing care for the oncology patient across the disease continuum within its health care system.

The OEPC model reinforces the value of oncology nurses collaboratively pooling resources and finding creative solutions to cost effectively improving oncology education and practice across a large health care system.

## 281

EXPANDING EVIDENCE-BASED PRACTICE TO ALL ROLES IN NURSING. June Eilers, PhD, BC, CS, Nebraska Medical Center, Omaha, NE; and Judith A. Heermann, PhD, RN, UNMC College of Nursing and Nebraska Medical Center, Omaha, NE.

Evidence-based practice (EBP) has been embraced by nursing as we strive to advance the science of our profession and to improve patient outcomes. The focus has been on direct care for patients and families, which must be addressed because it often takes 17 years to translate research findings into practice. However, EBP success requires an infrastructure and environmental culture that embraces and expects EBP of all nurses. Nursing as a profession and ultimately, nurses and patients/families will benefit from the integration of EBP concepts into all aspects of nursing.

This project's purpose was to expand EBP into nursing leadership roles at our facility through an educational series that involved nurse leaders in active learning and planning for the translation of research into their practice. The aim of the education was to facilitate the development of a nursing culture that expects all nurses to use effective systematic processes for applying empirical evidence to assure that practices are safe, effective, and efficient.

The target audience included nurses in leadership roles as directors, managers, clinical educators, CNSs, and APNs. Educational sessions were organized using adult learning principles to actively involve participants in group activities focused on the integration of EBP into their practice. Topics included articulating the meaning of EBP, appraising evidence for application to practice, applying principles of EBP to own practice, identifying resources to support EBP, and strategies for cultivating a culture for change toward EBP.

Participant evaluation of the sessions was very positive. They readily engaged in the activities and indicated on-going use of the information. Results from an EBP beliefs survey will continue to guide planning and

implementation for on-going activities to foster EBP throughout nursing in our organization.

Oncology nurse leaders have a responsibility to determine if the infrastructure and culture in their organization support EBP in all nursing roles. Leaders should strive for a balance between production efficiency and patient safety in the establishment of a work environment that focuses on optimum patient outcomes for individuals with cancer. The approach used in this project can be adapted to work within different settings.

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**OPTIMIZING RESOURCES—THE PHARMACEUTICAL CLINICAL EDUCATORS' CONTRIBUTION TO EVIDENCE-BASED EDUCATION.** Barbara Poniatowski, RN, RNC, MS, AOCN®, Susan Temple, MSN, RN, AOCN®, and Cynthia Umstead, MS, RN, OCN®, GlaxoSmithKline, Philadelphia, PA.

Nursing education directors and instructors are being challenged to provide quality evidence-based education for nursing staff in an arena experiencing a knowledge explosion and shrinking healthcare dollars. Institutional educational efforts may be constrained due to budgetary concerns; therefore, new avenues of support for nursing educational opportunities are valued by both the education staff and the healthcare clinician.

Support for continuing and in-service education is being sought from a variety of sources. The Pharmaceutical Clinical Educator (PCE) may be one source uniquely positioned to provide such a service.

PCEs develop and present evidenced-based continuing and in-service education on numerous disease states and pharmaceutical products locally, regionally, and nationally. Some of these programs are offered in both the clinical setting and as evening programs. Evening programs utilize local and/or national speakers recognized for their expertise in areas of interest to oncology nurses. Through involvement in Oncology Nursing Society Chapters, the PCE is able to support oncology certification reviews, self-learning modules, and focused seminars. Additionally, many PCEs are ONS chemotherapy and biotherapy trainers offering that program at a minimal cost to healthcare professionals. The PCE is not only a resource for staff education but also for patient education. Various didactic patient education materials are furnished by the PCE. The materials include information for disease, treatment, and supportive care management. The PCE responds to requests from and provides support to, patient advocacy groups.

As the PCE role continues to develop the PCEs at GlaxoSmithKline Oncology are constantly evaluating and updating their evidenced-based programs and exploring unique opportunities to contribute to nursing and patient education.

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**NURSE EMPOWERMENT THROUGH A CLINICAL LADDER PROGRAM.** Catherine Bergman, RN, BSN, OCN®, Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH.

The clinical ladder program was created to recognize those nurses who made the career decision to stay at the bedside and avenues in which to empower themselves and their institution. Research has shown that empowering the individual is a major benefit not only to the individual, but also to the institution in which they are employed.

The purpose of this poster was to outline the benefits of the clinical ladder program and the different avenues to advance through the program.

Participation in the clinical ladder program allows nurses to gain empowerment through committee and community work, writing policies, giving in-services and many other avenues benefiting their institution and community. The three areas of focus were selected to enhance the nurses' competency in their fields and are as follows: clinical management, education and research. These focus areas allow the nurses a broad range in which to cultivate their clinical strengths, encourages them to be accountable, improves interpersonal relationships, increases self-confidence, and provides a clinical environment in which to promote professional development.

A survey of current clinical ladder nurses was conducted to examine the reasons why they entered and completed the program. With a 100% response rate, 37% listed increased knowledge base, 32% listed self-improvement, and 31% reported financial incentive as motivation for completing the program. The nurse's involvement in education, com-

munity and professional organizations provided them the opportunity to accomplish this.

A Clinical Ladder Program can increase problem solving and decision making, enhance clinical skills, improve interpersonal relationships and increase self confidence enabling nurses to initiate change in their practice environment.

## 284

**HOLD OR FOLD: WINNING THE EVIDENCE BASED RETENTION GAME.** Denise Rutkowski, MS, RN, CRC, OCN®, Elizabeth Rodriguez, BSN, and Darryl Somayaji, MSN, Roswell Park Cancer Institute, Buffalo, NY.

Demographics demonstrate that experienced Oncology Nurses are aging. There is increased competition to attract and retain highly desirable employees. Retention statistics identify critical factors that influence a nurse's decision to stay with an employer or seek alternate employment.

This presentation will identify and define the key factors and programs that have been identified as influencing career path decisions and encourage newer Roswell Park Cancer Institute (RPCI) nurses to remain at the Institute.

The following programs have been shown to favorably effect a nurse's decision to continue their employment at RPCI:

- Focus Groups
- Mentors
- Active Nursing Retention & Recruitment Committee

Focus groups provide for meaningful two-way dialogue between Oncology Nurses and Human Resource (HR) Administrators. These groups allow the nurses who have been employed one year or less an opportunity to express strengths and weaknesses of their orientation and first year experiences. This allows Human Resources to obtain real-time feedback and process this information. In turn, it is shared with department heads, so issues may be addressed and positive areas are reinforced. This allows orientation and precepting to be an evolving process.

Assigning new nursing employees interdepartmental mentors allows for nurses to learn the "culture" of the facility. Mentors provide tools and experience to guide novice nurses through the challenges of the first year.

The RPCI Nursing Retention & Recruitment Committee has assured ownership of Nursing Retention by designing subcommittees that will enhance the employment experience. One subcommittee is working on obtaining grant money to assist nurses in continuing their education.

Our statistics have demonstrated that proactive retention and recruitment strategies allow for higher rates of new employee retention and satisfaction of seasoned employees.

By administrators working closely with expert and novice nurses, retention rates increase. This ultimately assists in recruiting nurses to a facility.

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**FOSTERING ADVANCE CARE PLANNING IN A HOSPITAL-BASED RADIATION ONCOLOGY PRACTICE.** Anita Boucher-Concilio, RN, OCN®, Marie Bakitas, DNSc(c), AOCN®, ARNP, FAAN, and Sarah Usher, RN, MSN, OCN®, Dartmouth-Hitchcock Medical Center, Lebanon, NH.

Patients with potentially life-threatening illness often lack Advance Directives (ADs) that are readily available to their care team. Critical discussions about end-of-life care may not take place until the patient is close to death-- a point of extreme stress. Radiation oncology nurses (RON) are in a key role to assist patients in the development and documentation of ADs.

A quality improvement project which developed an algorithm to increase awareness and availability of oncology patient's documented preferences for care.

Several instances of health crises in radiation patients prompted a desire to raise our departmental staff's awareness of patient's preferences for care--primarily AD. The "ONS Radiation Therapy Documentation Tool and Assessment" (our department's assessment standard) does not assess for the presence of ADs. The nursing staff modified the ONS form to assess for the presence and availability of AD in our computerized clinical information system (CIS). Patients are questioned about AD at the time of the initial nursing assessment -typically a non-emergent setting. If no AD exists, the RON provides a pamphlet describing the rationale for ADs,

provides the appropriate AD form, and queries the patient regarding their desire for referral to a social worker for further discussion and assistance in completing the forms. Additionally, the Palliative Care Nurse Practitioners have provided education and one-on-one mentoring to assist our RON and staff in AD discussions and documentation procedures.

Retrospective and prospective data from our multimedia record are being collected and analyzed to trend the documentation and actual number of AD in the CIS from September 2005 to March 2006. The first quarter's evaluation has demonstrated an improvement since project implementation.

We anticipate dissemination of these results will influence the expansion of this algorithm within our medical center. We would recommend that the ONS Radiation Oncology Nursing SIG modify the tool incorporate assessment of AD. Ongoing education to increase nurses' comfort with these discussions has been important to the success of this project. RON are important members of the oncology care team and should incorporate these critical discussions with patients and their families into their standard of care.

## 286

**PSYCHIATRY FOR THE NON-PSYCHIATRIC NURSE: CARING FOR THE ONCOLOGY PATIENT WITH DEPRESSION OR ANXIETY.** Mary Hughes, BS, MS, RN, CNS, University of Texas M.D. Anderson Cancer Center, Houston, TX.

The oncology nurse is the health care team member most familiar with the patient. S/he is the one who first notices emotional/behavioral changes in the patient and brings it to the physician's attention. Depression has been reported in various studies of oncology patients to range from 20% to 70% depending on the stage of cancer. Anxiety often accompanies the depression, but it can be seen alone in the oncology patient. It is important for the oncology nurse to be cognizant of these co-morbid conditions so they can be addressed.

This presentation will explain criteria for a diagnosis of depression, anxiety, and adjustment disorder. It will differentiate between grief and depression.

Detailed psychopharmacological treatment options will be described as well as other treatment options such as behavioral therapy.

Community resources will be discussed. Knowing when to refer and to whom as well as what local community resources are available can be helpful to the oncology nurse. A psychiatric referral is preferable, but if resources are unavailable, the oncologist often treats these conditions.

It is important for the oncology nurse to be knowledgeable of signs and symptoms of depression and anxiety, treatment options, and medication side effects. Even though oncology is the nurses' specialty, patients often have a co-morbid psychiatric condition that the oncology nurse can learn to recognize and intervene appropriately.

## 287

**A LEARNING TOOL FOR NEW UROLOGY NURSES: HOW TO CARE FOR UROLOGY DRAINS.** Margie Scott, RN, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Although new nurses work with a clinical coach and have experts available to consult, they identified that explanations and observations during their orientation were not sufficient to enable them to provide quality patient care. To assure competency, new nurses identified that they needed to know where the tubes or drains originated, their function, how to assess drainage, how to anticipate needed interventions to maintain function, and how to meet documentations requirements.

Nurses on our surgical urology inpatient unit must understand how to care for and document assessments and interventions for a varying complexity of postoperative drains. A resource tool was developed for newly hired nurses to assist with their education regarding urology drains.

A newer nurse on our team surveyed the educational needs of our nursing staff regarding postoperative drains and worked with a medical resident to obtain information and photographs. A reference notebook with photographs and information about each urology drain was created. A quiz was also developed to evaluate the educational outcomes of the intervention.

In a survey of 30 nurses, 100% indicated that the notebook assisted to improve their knowledge, patient care and patient outcomes, and improved consistent documentation.

Creating an available educational resource for new nurses to utilize during orientation supported their learning, assessment and interventions, and improved the care they provide to urology patients on our unit.

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**BRANCHING OUT TO OTHERS.** Shirley Blanton, RN, OCN®, Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH.

Nursing administration adopted a new nursing process based on the book, *Relationship-Based Care: A Model For Transforming Practice*, published by Creative Health Care Management, Inc. As a member of a book club we read the book and presented the chapters to our units. The poster was designed to present one chapter, teamwork, to the staff.

The tree was chosen as the centerpiece of the poster because of several characteristics that we hope staff will emulate. Briefly these are flexibility, strength, sizes, colors, and branching out and up, much like humans. Each staff member signed a leaf and placed it on the tree as a pledge they would honor a commitment to their co-workers and share the organizational goal of excellent patient and family care.

Our nurse manager is using the poster as a means of reconciling personal differences with staff and patients. Small pocket cards have been distributed to the staff as a reminder of their pledge.

Our nursing satisfaction scores have gone up in part due the way we are changing our nursing practice and raising awareness. The poster and an article have been published in our nursing newsletter, *JCNN*.

Raising awareness and educating the staff about the new process has been a rewarding experience. The poster is hanging in the unit for staff and patients to view. Other units have come to see the poster and are making their own with variations. We are branching out to others.

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**IMPROVING THE CARE OF CRITICALLY-ILL HEMATOPOIETIC STEM CELL TRANSPLANT PATIENTS: CHALLENGES OF A NON-SPECIALIZED NURSING STAFF.** Kristen Geraghty, RN, OCN®, Ronnah Pascua, RN, and Marlon Saria, MSN, RN, AOCNS, UCSD Medical Center, La Jolla, CA.

The increase in the number of hematopoietic stem cell transplant (HSCT) cases performed annually has presented unique challenges to nursing. With a certain number of HSCT patients requiring advanced support in the intensive care units, issues such as cross training between specialties have surfaced.

The goal for this project is to identify and address barriers to safe and competent nursing care of critically-ill BMT patients.

Critical care nurses were asked to participate in a written survey of their knowledge, skills, and attitude in caring for HSCT patients. A learning needs assessment was obtained through personal interviews and an assessment of available HSCT resources in the ICU was conducted. Case review of three (3) prominent cases in which there was a documented delay in transfer to a higher level of care was also performed.

A full day course on the care of the critically ill bone marrow transplant patient was held in August 2005. A series of monthly BMT-ICU collaborative case study presentations were also held beginning in September of 2005. Quick reference materials for the ICU manual were developed and eventually, a new BMT manual was provided for the ICU. Another series of in-services were offered to review the sections of the BMT manual and to provide an opportunity for clinical questions.

The ICU nurses scored 53% on the HSCT pre-test. BMT and medical-surgical nurses were also asked to complete the pre-test and scored 92% and 46% respectively. Currently, investigators are looking at data from quality variance reports to determine improvement in practice. A post-test will be conducted in 6 months.

Advanced hemodynamic monitoring, ventilation support, and continuous electrolyte replacement, are but a few of the interventions that cannot always be supported on a BMT unit. These interventions make ICU admissions inevitable for a number of HSCT patients. ICU nurses need the knowledge and skills to address the unique needs to HSCT patients. Transplant nurses and critical care nurses working with HSCT patients must continue collaborative efforts to improve outcomes in the HSCT patient population.

## 290

**ONCOLOGY NURSING COMPETENCY PROJECT (ONC PROJECT): STANDARDIZING PRACTICE IN A UNIVERSITY-AFFILIATED MEDICAL CENTER**



WITH A COMPREHENSIVE CANCER PROGRAM. Maria Slezak, RN, BSN, OCN®, UCSD Medical Center—Moore's UCSD Cancer Center, La Jolla, CA; and Marlon Saria, MSN, RN, AOCN®, UCSD Medical Center, San Diego, CA.

Topic: The inconsistencies in practice amongst the various departments within oncology became evidently clear when a group of oncology nurse-leaders representing the different departments and divisions within oncology convened in January 2005. "Requirements for Improvement" findings from the recently concluded Joint Commission on Accreditation of Healthcare Organizations (JCAHO) survey were discussed. Two of the findings relate to the oncology department, specifically to oncology nursing practice: the sporadic documentation of patient education in the ambulatory care clinics and incomplete performance evaluation and competence validation. A consensus was reached to further discuss approaches to standardizing oncology nursing practice within the institution.

Problem/Purpose: The aim of the competency project was threefold: standardize nursing practice between oncology subspecialties, provide a non-threatening environment for competency evaluation and continuing education, and to design a structured method to validate ongoing nursing competency evaluation.

Interventions: All oncology nurses, regardless of job titles and descriptions, were required to attend a 4-hour competency evaluation and update session. The session topics were identified through expert consensus and job analysis. Nearly all of the competencies had a psychomotor and cognitive focus, with the exception of a video presentation that underscored the affective domain of nursing care. The sessions take into account adult learning principles and use a variety of instructional methods including a self-learning module with a post-test, lecture-discussions, demonstration/coaching, simulated clinical practicum, case studies, and video presentations.

Interpretation / Evaluation: Ninety-five percent (N=118) of the oncology nursing staff attended the comprehensive oncology competency evaluation sessions scheduled over 4 days. Our project showed that standardizing the competency validation process can be an effective approach in the standardization oncology nursing practice.

Discussion: Competence for professional practice evolves with society and the system in which professionals practice (Utley-Smith, 2004). There is a lack of consistency in the practice of competency validation and documentation from institution to institution and between different departments in the same institution. The oncology nurse-leaders established that the initial goals for this project were met and thus considered it a success, taking into account that this was a first attempt at standardizing the competency validation process for oncology nursing practice.

## 291

A NOVEL INTERDISCIPLINARY INTENSIVE COURSE IN CANCER RISK COUNSELING AND COMMUNITY-BASED RESEARCH. Deborah MacDonald, PhD(c), MS, RN, APNG, Kathleen Blazer, MS, CGC, Katrina Lowstuter, MS, CGC, Julie Culver, MS, CGC, Melanie Palomares, MD, MS, and Jeffrey Weitzel, MD, City of Hope Comprehensive Cancer Center, Duarte, CA.

Community-based oncology nurses and other clinicians trained in cancer genetics and cancer prevention/control research are critically needed.

While clinical cancer genetics services are increasingly being delivered in community settings, potential clinical research participants may be overlooked, representing a lost opportunity to contribute useful data to larger research efforts. The National Cancer Institute (NCI) notes the need for communications and strategies to address clinical, behavioral and societal issues associated with cancer susceptibility (2005 NIH Publication No. 03-5446). The document highlights the importance of promoting networks, partnerships and coalitions to translate research results into clinical practice. We previously conducted three 10-day pilot clinical training courses that demonstrated advanced practice nurse, genetic counselor, and physician improvement in cancer genetics knowledge (N=40;  $p<0.001$ ). Our needs assessment survey found high interest in continued education and cancer genetics research participation. An evolved version of the course, including research collaboration methods training, was recently funded (NCI R25 Grant#CA112486).

We developed a multi-modal, interdisciplinary intensive course to confer practitioner-level competence in genetic cancer risk assessment and skills to promote research participation in a community setting.

The course provides approximately 60 hours of prescribed didactic and interactive instruction, twelve months of continued practice development via web-conferencing and long-term access to a web-board for asynchronous learning.

The novel program design uses multiple synchronous and asynchronous teaching modalities to maximize learning, and is flexible to the needs of participants' varied training backgrounds and practice settings. Course impact on knowledge, skills, practice changes, and research participation is measured by pre/post-course knowledge tests, case-based learning logs, mock counseling evaluations, 6-month post-course case presentations, and pre/post-course and 12-month proficiency and self-efficacy surveys.

Long-term program objectives are to increase community access to competent cancer genetics services and accrual of high-risk persons into research protocols. Oncology nurses and other clinicians trained in cancer genetics and cancer prevention/control research will help fill a critical national void. The curriculum and delivery design may serve as a model for other cancer centers in addressing NCI priorities.

## 292

A CRITICAL THINKING COMPETENCY PROJECT FOR ONCOLOGY NURSES. Patty O'Connell, BSN, RN, and Nancy Delzer, MBA, MSN, AOCN®, BC-PCM, Columbia-St. Mary's, Milwaukee, WI; Theresa Murphy, RN, MS, OCN®, Columbia-St. Mary's, Ozaukee, WI; and Patricia Quinn-Casper, RN, MSN, MAPS, AOCNS, Christine Toft-Reichert, RN, BSN, and Susan Westlake, RN, PhD, AOCNS, Columbia-St. Mary's, Milwaukee, WI.

The ability to think critically is an essential component of competent oncology nursing practice. The ONS 14 high-incidence problem areas provide the framework for this innovative competency project. Patient stories captured in videotaped interviews allow nurses to thoughtfully reflect on the impact of the cancer journey and the nursing care required.

The purpose of this project is to creatively engage staff nurses in an interactive learning process to enhance competency in critical thinking and provide a teaching model for oncology nurse educators.

Six individuals diagnosed with cancer were asked to share their experiences of living with their illness. The nurse interviewers posed several open-ended questions to initiate discussion. The conversations were videotaped and responses were categorized according to the ONS 14 high-incidence problem areas. Six areas were identified as the focus of this initial critical thinking teaching module: Mobility, Nutrition, Comfort, Complementary/Alternative, Health Promotion and Survivorship. Brief patient biographies and treatment histories were compiled to frame each individual's experience of the problems as they described them. Questions and answers specific to disease pathophysiology, diagnostic work-up, staging, psychosocial adjustment, and treatment regimens and their complications, were formulated and organized into a facilitator guide. Small discussion groups of 5-8 staff nurses viewed and critically analyzed a 32-minute composite videotape with the guidance of a clinical nurse educator. Facilitators stressed evidence-based nursing strategies and encouraged participants to share clinical experiences, insights, and learning with colleagues. The 2.5-hour module created a unique opportunity for nurses to translate patient experiences into new clinical realities.

Evaluations and post-tests were completed by 52 oncology nurses. Evaluations were overwhelmingly favorable and post-test scores demonstrated an increased knowledge of disease pathophysiology, treatment, complications and patient education, including health promotion strategies.

The use of a didactic method grounded in patient stories provides a non-threatening and engaging opportunity for oncology nurses to experience shared learning. Critical thinking is enhanced when it is based in clinical reality and directly applicable to each nurse's practice. This innovative approach of thoughtful clinical inquiry is relevant for all dimensions of oncology nursing.

## 293

VALUING OUR COLLEAGUES: PROVIDING EDUCATION TO OUR NURSING COMMUNITY. Linda Kennelly, RN, PhD, Excelsior College, Albany, NY; and Barbara MacDowell, Albany Medical Center, Albany, NY.

The growth of oncology nursing in the Capital region has been remarkable with an array of practice specialties: physician practice groups, IP oncology units, and OP specialty units evolving. In addition, home care agencies and hospices have experienced growing caseloads of oncology

patients. It was timely therefore that a survey be developed to ascertain key information to facilitate how the chapter was to proceed in meeting the learning needs of the nurses in our community.

A brief, but comprehensive one-page tool was developed for distribution to all nurses that attended chapter meetings as well as current the membership. The one-page form included survey topics addressing educational learning needs, communication and information technologies utilized (e-mail, websites) as well as basic demographic information.

A total of 128 forms were mailed to nurses in the community, as well as distributed at chapter meetings. Fifty-nine completed forms were returned to the Clinical Practice and Research Committee chairs. As anticipated, the majority of the completed forms were those of chapter members - forty-four. However, data from non-members attending meetings was welcomed and encouraged.

The data was entered and then analyzed utilizing SPSS. A summary was presented to the local chapter board. Resulting discussions supported proactive changes in use of communication technology, selection of timely educational topics and chapter activities that engage the new member as well as occasional meeting participant.

Survey research is but one methodology to engage the respondent as an active participant in their learning needs. In addition, the data provides information for future initiatives of the chapter. The survey tool developed will be discussed as well as the details of data collection. Finally, the pros and cons of this process as part of a change methodology will be discussed.

## 294

**IMPROVING ON-SITE EDUCATION FOR ONCOLOGY NURSES IN A COMPREHENSIVE BREAST PROGRAM.** Kathleen Roberto, RN, BSN, OCN®, and Lorraine Hutson, MS, ARNP, AOCN®, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

Current Treatment trends and the latest research findings are often difficult to disseminate to oncology nurses in an outpatient clinic setting. Time constraints, competing priorities, and rapid release of information makes it particularly challenging to be knowledgeable of the latest clinical advancements in cancer care. Despite this challenge it is vital that staff nurses caring for breast cancer patients are updated on issues and new procedures that they can use in their daily practice.

The purpose of this project was to provide the latest information on all breast cancer treatment modalities for staff nurses in an outpatient clinic setting. Nurse Practitioners and Primary Nurses collaborating in the clinic had the ability and desire to share their knowledge and expertise with colleagues. Developing and presenting a series of four one-hour classes in the clinic at a convenient time for nursing staff encouraged professional development for both presenters and participants.

Relevant topics on breast cancer patient issues such as lymphedema and survivorship were selected. Updates on Surgery, Radiation Therapy and Adjuvant Therapy were also addressed. Nurse Practitioners and nurses working in the program were invited to teach one of the above topics. Clinic nurses were invited via individual invitations. The team planning conference room, which is close to the clinic was chosen and breakfast was provided. Each presenter developed an outline and objectives for the presentation. One contact hour was provided.

The response from the participants was positive. Six to fifteen nurses attended each of the four programs. In the evaluations, the participants stated the program content was above average or excellent, and many wrote that they valued the timeliness of the information.

With the constant influx of new information on the treatment of breast cancer, nurses working in a comprehensive breast program clinic can benefit from timely and accurate information provided by colleagues in a convenient setting. By providing a series of four one hour classes, and enlisting the expertise of our own staff, we met our goal of professional development and increased knowledge for both presenters and participants.

## 295

**ASSESSMENT: WHAT IS IT AND HOW DO I DO IT?** Virginia Bowman, RN, MSN, AOCNS, Rosanne Arlington, RN, CNS Med-Surg, Elizabeth Fogarty, RN, Maisha Amusa, RN, Kuristeen Turner, RN, OCN®, Diana Botello, RN, BSN, Lindsay Gaido, RN, MS, and Jennifer Suasin, RN, University of Texas M.D. Anderson Cancer Center, Houston, TX.

At our comprehensive cancer center, nurses receive a classroom orientation focused on care of the oncology patient, including a review of

laboratory values, management of oncologic emergencies, and policies and procedures. Physical assessment skills are evaluated by the clinical coach at the bedside during unit orientation and any specific needs are addressed. Informal feedback was received from both clinical coaches and new employees stating that some nurses lacked confidence in their assessment skills or were using poor technique when conducting physical assessments.

To enhance and improve physical assessment skills of medical-surgical oncology nurses on four inpatient units by increasing the confidence level of the nurses performing the assessments. It is believed that improved confidence and skill will support improved patient outcomes.

A survey was conducted to evaluate confidence levels among clinical nurses regarding physical assessment skills. Information was collected using a 10 cm visual analog scale. Nurses rated their confidence level with assessment of individual organ systems and emergency situations. Based on the findings, classes were developed and taught by various APNs and a nursing instructor. The methods utilized were in-services on individual systems and one-on-one training at the bedside with the nursing instructor. Each in-service was recorded on video so that all nurses on these units could access the information. The institutional e-mail system was also utilized to send brief "System of the Month" questions and answers to the clinical nurses involved.

Pre- and Post-test evaluations were completed for each educational session; at the end of the program, we will repeat the survey on confidence with assessment skills and perform an overall program evaluation.

Nurses bring a wide variety of skills and experience to the job, and a thorough physical assessment is a key component. After listening to the concerns of clinical coaches and new orientees, a group of APNs and clinical nurses joined together to define the issues and develop strategies to address them. The result was an educational program designed to enhance both the assessment skills and confidence levels of clinical nurses. Components of this program will become part of the orientation for new nurses.

## 296

**DEVELOPING A COMMUNITY HEALTH ROTATION AT A COMPREHENSIVE CANCER CENTER.** Lynn Thompson, RN, MPH, OCN®, Dana-Farber Cancer Institute, Boston, MA; Joanne Dalton, PhD, APRN, BC, University of Massachusetts, Boston, MA; and Diane Hanley, MS, RN, BC, and Patricia Reid Ponte, RN, DNSc, FAAN, Dana-Farber Cancer Institute, Boston, MA.

Shortages in the nursing workforce, nursing faculty and clinical placements require creativity and development of new relationships and strategies to meet our obligation to the public for qualified nurses. An innovative program to respond to these challenges was developed utilizing a Comprehensive Cancer Center as a clinical site.

Dana-Farber Cancer Institute (DFCI) became a community health clinical site for University of Massachusetts, Boston (UMB) nursing students. UMB has students from diverse backgrounds and DFCI has a nursing workforce that is under-represented by minorities. The advantages to DFCI of having UMB nursing students on campus were numerous: introducing students to oncology, exposing students to expert nurses, and enhancing the DFCI nursing workplace by having students from diverse backgrounds. The advantage to UMB of having students at DFCI was, in addition to the above, provision of both a clinical site and an instructor in a period of time where there is a shortage of both. The challenge was how to provide a rich community health experience within a comprehensive cancer center.

Twenty-four students have completed their rotation at DFCI and feedback has been positive. Students and preceptors submit evaluations and adjustments and enhancements are made in response.

Based upon our experience, we suggest that other institutions collaborate with academic institutions to provide a community health experience that reflects both the significant role that ambulatory plays in care of patients in the community as well as introducing students to oncology.

## 297

**DEVELOPING AND IMPLEMENTING A SUPPORT AND RENEWAL PROGRAM FOR NURSING AND PATIENT CARE SERVICES STAFF.** Anne Gross, MS, RN, CNA, Susan Bauer-Wu, DNSc, RN, and Jennifer Mills, Dana-Farber Cancer Institute, Boston, MA; Jane O'Rourke, LICSW, self-employed,

Lexington, MA; and Mary Jane Ott, MN, MA, APRN, BC, and Diane Hanley, MS, RN, BC, Dana-Farber Cancer Institute, Boston, MA.

Oncology care is challenging and demanding. In addition to requisite technical skills, inner capacity for empathy and caring is required. Many oncology settings do not provide therapeutic self-care opportunities to staff that care for the complex needs of patients and families. One cancer center's nurse leaders, who view staff renewal as an essential component of their leadership mission, built successful programs for professional and nonprofessional staff.

Short term goals:

1. Develop and implement self-care programs for nursing and patient care staff, offering relaxation, rejuvenation, reflection and renewal activities
2. Acknowledge unique stressors in the work environment and teach methods for managing them

Long term goals:

1. Retain employee workforce; promote optimum staff effectiveness and satisfaction
2. Promote overall quality of care.

Four programs comprise this initiative:

- Overnight retreats: Weekend events for all staff; activities include: massage therapy, yoga, inspirational speakers, manicures, walking/jogging, sledding, expressive arts and writing, singing, dancing, cross country skiing, meditation, reiki.
- Support groups: Facilitated by a LICSW for clinic assistants and front-line staff during paid time to process feelings, difficult interactions, role play new behaviors, group bonding.
- Meditation:
  1. Drop-in sessions on patient units
  2. One hour sessions for support staff in a group setting.
- Educational / Training Sessions: (non-professional staff)
  1. Self-care
  2. Communication, team work
  3. Psychosocial aspects of cancer
  4. Basic cancer education

Focus groups are held to plan/improve program content; Staff turnover/sick time reports are monitored.

Retreats: N=48

Comments: What do you like most?

"Being with colleagues; having fun"; "Nurturing and getting in touch with myself"; "Pausing, reflecting relaxing outside work";

Overall Rating: 86% good-excellent

Met Expectations: 84% yes

Attend Again: 84% yes

Support Groups: N=150

Comments: What do you like most?

"Learning to manage my grief"; Learning to calm difficult patients; "The freedom to speak freely"

Overall Rating: 94% good-excellent

Information Useful?: 89% good-excellent

Addressing self-care needs are a strong option nurse leaders can utilize to assure staff satisfaction, effectiveness and retention while promoting quality patient care. Based on initial success, the programs described are being expanded in content and number in 2006.

## 298

ENCOURAGING CONFORMITY FOR IMPROVED PATIENT CARE. Linda Schiech, RN, MSN, AOCN®, Fox Chase Cancer Center, Philadelphia, PA.

How are we sure that "Red" means stop and "Green" means go when driving anywhere in the world? These are universally understood or standardized concepts. Attempting to standardize data for healthcare documentation allows oncology nurses on different units in a hospital to communicate identical information in the same way. It allows oncology nurses in all areas of a hospital to communicate about the same patient. It permits communication about a patient with another hospital anywhere in the world.

Our Comprehensive Cancer Center is phasing in an electronic medical record. We are currently working on the stage of clinician documentation using a vendor system, and are attempting to make the system work for universal communication, sharing and exchanging of information.

Consultants were used to help with process redesign in order to make the transition from the paper to the electronic world easier. The consultants along with a small group of nurses determined the "current state" of documentation in our facility. The group did a forms analysis of 237 forms that are used by all clinicians, and synthesized the data from those forms to determine common data elements or concepts. Then a group of approximately fifty clinicians from various disciplines, mostly nurses, standardized the data to make it consistent throughout the institution for documentation. The next step in the process is "Joint Application Design" which took the standardized data, identified processes and workflows and brought system developers, builders and end users together to create documentation forms.

Our goal was to standardize data and have oncology nurses involved to make decisions for the design process of the forms to conform to their workflow. The work group has created Vital Signs, Intake and Output and Patient Admission History forms to be implemented in Spring 2006, and continue their efforts toward other Nursing Assessments that will be phased in over the next year. Quality monitoring will be utilized to evaluate nurse's use of the forms.

It is critical for oncology nurses who will be end users of a computerized documentation system to be involved in the process of standardization and design of those forms.

## 299

SUPPORT FOR THE ONCOLOGY SUPPORT STAFF: RECOGNIZING DIFFICULTIES THAT FACE NON-LICENSED STAFF IN AN ONCOLOGY SETTING. Barbara Cashavelly, MSN, RN, AOCN®, Katie Binda, MSW, LICSW, and Elizabeth Altman, BS, Massachusetts General Hospital Cancer Center, Boston, MA.

Prevalence of burnout, job dissatisfaction and stress in the oncology workplace has been widely studied. Understanding the impact of caring for the oncology patient on oncology nurses has been researched since the 1970's. However, the experiences of non-licensed support staff in the oncology setting have rarely been examined. Support staff's contributions to patient care are rarely acknowledged or addressed. Value is placed primarily on the practical aspects of their jobs and not how their experience in the clinical environment impacts their daily working lives. It remains unknown how applicable the experiences of the oncology nurse are to support staff working in the oncology setting. However, given the level of contact the support staff has with patients, it is probable that similarities may exist.

In a large academic Cancer Center, non-licensed support staff working in an oncology setting was experiencing job dissatisfaction and burnout. There was high turnover, emotional struggles, and lack of preparation for working with oncology patients. Acknowledging these issues, nursing leadership, administration and social work collaborated to understand and address the needs of the non-licensed support staff.

The purpose of this project is to describe the experiences of the non-licensed support staff working in an ambulatory oncology setting caring for cancer patients.

A descriptive qualitative approach was developed utilizing 7 focus groups of non-licensed support staff. The participants included: medical assistants, phlebotomists, phone coordinators, office assistants, and secretaries. The groups were facilitated by an oncology social worker. Discussions included the following areas: positive and difficult aspects of their work, caring for yourself, and suggestions for a supportive work environment. Five themes were identified: relationships with patients, coping with death and dying, value and recognition from patients and professional staff, balancing function with emotion and dealing with difficult patients.

The findings provided insight into the practice experiences and the role of the non-licensed support staff caring for cancer patients. Findings are similar to those found in the oncology nursing literature.

Findings provide oncology nursing leadership insight into the significance of the role of the oncology non-licensed staff and also have implications for the development of an educational support program.

## 300

CREATING AN ONCOLOGY FOCUSED EMPLOYEE HEALTH SURVEILLANCE PROGRAM: AN EXAMPLE OF INTERDEPARTMENTAL COOPERATION. Patricia Herman, MSN, RN, AOCN®, and Robin Fritsch, BSN, RN, OCN®, St. Luke's Hospital and Health Network, Bethlehem, PA; Donna Bydlon,



RN, OCN®, St. Luke's Hospital and Health Network, Allentown Campus, Allentown, PA; and Linda Lefevers, BSN, RN, and Stephanie Dillman, BSN, RN, St. Luke's Hospital and Health Network, Bethlehem, PA.

Oncology nurses are required to administer and in some settings prepare chemotherapy, which is designated as hazardous material. Currently there is no safe exposure level determined and there is no consistent monitoring method in place. (Brown et.al, 2001). In 2003, we learned that the National Institute for Occupational Safety and Health (NIOSH) was about to release new guidelines regarding the safe handling of hazardous drugs. In our continuing efforts to ensure staff safety, a multidisciplinary Task Force was formed to examine practice and policies and the recommendations of various bodies such as the Oncology Nursing Society (ONS) and NIOSH.

The purpose of this project was to use an interdepartmental approach to develop an employee health surveillance program and to improve practices to ensure staff safety while preparing or administering chemotherapy.

A task force with representation from Pharmacy, Occupational Health, Oncology Nursing, Employee Health and Hospital Safety reviewed the appropriate policies for handling hazardous drugs. The use of appropriate personnel protective equipment (PPE) was updated (Brown et. al. 2001). With the support of Occupational/Employee health, a program was developed to provide staff with the opportunity to have a yearly physical exam and blood tests to monitor for any potential side effects to the handling of hazardous drugs.

Unannounced surveys demonstrated 100% compliance with the changes in PPE and other handling issues. Each employee is offered the monitoring opportunity at the time of his or her yearly evaluation. Currently about 10% of the personnel eligible for this program have chosen to participate.

In this safety conscious environment, it is important to remember that the environment must be safe for staff as well as patients. By including these departments in discussion and decision-making, this nurse led initiative provided advances in safety for more than one discipline and department. It also opened an opportunity for further research. It would be informative to examine the attitudes of nursing staff regarding personal safety and chemotherapy administration. This may provide a reason for the very low rate of people choosing to participate in health screening measures.

### 301

**CREATING A COMPETENT ONCOLOGY TEAM WHEN SIXTY PERCENT OF THE STAFF IS NEW.** Maribeth Mielnicki, RN, BSN, and Colleen O'Leary, BSN, OCN®, Northwestern Memorial Hospital, Chicago, IL.

Northwestern Memorial Hospital is not unique in that their Oncology Unit had a 60% staff turnover rate in eighteen months. There were not enough experienced RNs to give a one to one orientation to each new nurse as we struggled to provide a successful orientation for twenty two newly hired RNs.

An orientation program was needed that individualized the learning for each new staff member while not over taxing the existing staff. The primary goal was for each RN to be competent to care for the complex oncology patient at the completion of their orientation.

Each new employee met with the staff educator to assess their needs and develop an orientation plan. A plan was developed to strengthen their areas of weakness quickly in order to concentrate on the care of patients. During orientation, they met regularly with their preceptor, staff educator and manager to assess their progress and evaluate the orientation plan. The staff educator worked with groups of orientees developing needed skills. Unit leadership was utilized to assist preceptors with additional tasks. The hospital supported the program with classroom education supplemented by hands on experiences. All new staff attended sixteen weekly Fundamentals of Oncology classes. RNs hired with previous experience were given two patients independently and gradually escalated to a full patient assignment during their fourth to sixth week.

At the end of the orientation, the orientee evaluates the Fundamentals of Oncology classes. They meet with the manager to evaluate their orientation as well as the performance of their preceptor. Six to eight months later a peer review is completed on all the new staff.

The current nursing shortage and increased nursing opportunities outside of the hospital setting has hospitals struggling with orienting vast

number of nurses at one time. Orientation programs must meet the needs of the new nurse as well as address concerns of the staff already present. During the eighteen month time period all twenty two RNs successfully completed their orientation. Only one experienced RN transferred off the unit. With continued effort by unit staff and leadership, successful orientation programs are attainable.

### 302

**MENTORING A FRONTLINE LEADER THROUGH THE PROCESS OF DEVELOPING A MULTIDAY ANTINEOPLASTIC PATHWAY.** Patricia Berning, RN, OCN®, and Barb Johnson, RN, BSN, OCN®, Good Samaritan Hospital, TriHealth, Cincinnati, OH.

Renewed interest in a shared leadership model in nursing has been fueled by Magnet Certification and evidence from quality, safety and job satisfaction. Oncology nursing has long understood the need for developing critical thinking and leadership skills. As administrators, managers and teachers, how do we ensure that our staff have the skills they need to succeed in this shared leadership model?

In an effort to meet this staff development challenge, our institution implemented a program from the Center for Frontline Nursing Leadership. One hundred nurses were selected to partake in this program. The purpose of the program is to develop individual strengths through a practicum project management process. Participants go through an extensive self assessment, identifying their leadership strengths and weaknesses. In tandem with a coach, the participant works to align their skills/challenges with a project that meets a goal of the institution. During the practicum the strengths are utilized and with the help of the coach the challenges are recognized and overcome.

As the coach, I worked with a participant from the inpatient oncology unit to select a project, updating and consolidating our chemotherapy pathways. At our scheduled meetings we discussed her personal growth needs. She established a timeline and identified her resources. Communicating with various hospital personnel and navigating systems is an important element of the process. This lays the foundation for future projects.

As each activity on the timeline was achieved, we evaluated her progress in meeting her own personal growth, developing her leadership skills. At the end of the semester the evaluation tool showed that we both found the process very beneficial. Through her efforts the pathway was developed, approved by Shared Leadership Committees, the Pathway Development Committee and the Cancer Committee. Next semester she will pilot and implement the pathway.

In order for nurses to manage very complicated cancer patients their critical thinking and leadership skills are vital. This structured model gives the coach and participant excellent tools to develop and enhance this essential proficiency. The institution gained 100 projects and 100 nurses with emerging leadership skills.

### 303

**IMPROVED PRESCHEDULED HOSPITAL ADMISSION FROM THE PERSPECTIVE OF THE ONCOLOGY PATIENT.** Nicole Gooding, RN, CHPN, BN, MSHS, and Richa Gupta, MHS, Northwestern Memorial Hospital, Chicago, IL.

Oncology patients prescheduled for inpatient admission were dissatisfied with the speed of the admission process. They were waiting in the hospital lobby for an average for 4 hours before being admitted to their hospital room.

A 4 hour wait for an anticipated and known hospital admission was unacceptable to patients and resulted in their dissatisfaction. These sick, fatigued and vulnerable patients were put at risk through this delay as they were waiting for their bed in a public area without supervision of a healthcare provider.

A process improvement team comprised of nurses, social worker, bed assignment, admissions personnel, physician office personnel and a quality professional developed a call ahead procedure to provide patients with a more accurate admission time.

Since initiation of this project the time between arriving in the hospital lobby and being admitted to their hospital room has reduced from 4 hours to 23 minutes.

Collaborative cross departmental efforts have resulted in improved outcomes for oncology patients prescheduled for hospital admission.

### 304

**FINDING OUR NICHE: ONCOLOGY NURSES' PERCEPTION OF CARING FOR OLDER ADULTS.** Tara A. Cleary, RN, MA, APRN BC, GNP, OCN®, Memorial Sloan-Kettering Cancer Center, New York, NY.

The National Cancer Institute (NCI) projects 60% of new cancer diagnoses and 70% of cancer mortality occur in patients who are 65 and older. Currently, nursing assessment and intervention has focused on adult patients and has not examined the patterns unique to older adults. Therefore, it is essential for the oncology nurse to understand the special needs of older adults and incorporate this knowledge into practice.

In an attempt to better understand oncology nurses' perceptions and knowledge of caring for older adults, this NCI designated cancer center participated in a multi-step geriatric initiative that began with a needs assessment. This survey was designed to assess nurses' attitudes and knowledge of best practices and perceived barriers to care for older adults.

The NICHE (Nurses Improving Care for Healthsystem Elders) program, developed by the Hartford Institute of Geriatric Nursing at New York University, is a national initiative designed to help hospitals achieve systematic change to benefit older patients. The first step in the NICHE initiative is the Geriatric Institutional Assessment Profile (GIAP), a 68 item questionnaire. This tool was administered to 385 nurses from selected oncology specialties over a four week period.

The overall survey response rate was 47%. The survey identified staff shortages/ time constraints (75% of participants), lack of specialized services (68% of participants), and confusion over who is the appropriate decision maker (62% of participants) as obstacles to caring for older adults. When benchmarked against 143 other participating institutions, disparities were identified in our current practices. Areas for improvement were identified with regards to sleep disorders, incontinence and pressure ulcer management.

A limitation of the GIAP was that not all items on the survey were applicable to the ambulatory setting. Notwithstanding, the results have helped to heighten awareness and stimulate discussions regarding the unique needs of older oncology patients, identify knowledge deficits and areas for improvement and, generate future quality assurance and continuing education programs. Our next steps will be to share results with staff, provide geriatric workshops and partake in the geriatric resource nurse model.

### 305

**PREGNANCY AND CANCER: WHO'S MINDING THE BABY?** Sue Rimes, RN, and Andrea Milbourne, MD, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Prior to June 2004, there were no established guidelines at our academic cancer hospital for caring for pregnant patients. Because UTM-DACC does not offer obstetrical services, a formal collaboration between an identified maternal fetal medicine (MFM) physician group and the primary oncologist was needed. The ultimate goal of this collaborative effort was to ensure optimum care for these high-risk patients and their infants.

These guidelines ensure that pregnant patients with cancer, who deliver their babies during therapy, have access to a MFM specialist and an oncology nurse liaison to ensure optimum care for them and their baby.

A gynecologic oncologist, an oncology nurse and two MFM physicians met to develop guidelines to ensure early intervention, provide resources, and prevent complications in these patients. A policy was formulated with specific recommendations for the care of pregnant patients receiving chemotherapy or undergoing surgery. Consulting privileges were obtained for the MFM physicians at our hospital.

A clinical nurse liaison was appointed for the patient, oncologist, and obstetrician. This nurse actively participates in multidisciplinary meetings that affect the care of these patients. She helped design a patient education brochure that provides an overview of managing pregnancy during cancer treatment, diagnostic procedures, resources, and frequently asked questions. The nurse meets with each patient to review her role in their care and remains the point of contact during their pregnancy. The nurse facilitates the initial appointment with the MFM physician. The patient can see the MFM physician in consultation or permanently transfer her prenatal care to this group. Once the prenatal care provider is identified,

the nurse ensures that pertinent records are shared between physicians and institutions so that treatment issues are identified early and patient progress is monitored.

A protocol designed to collect prospective data on patient treatment outcomes and pregnancy outcomes was implemented. There are plans for regularly scheduled meetings to evaluate the policy and collaborate on further steps to improve the care of these patients.

This presentation will describe the role of the oncology nurse in the development and implementation of a policy governing the care of pregnant patients with cancer.

### 306

**UNIVERSITY OF TEXAS M.D. ANDERSON CANCER CENTER CASE MANAGEMENT MODEL FOR UNCOMPENSATED CARE: THE VALUE OF COLLABORATION IN ELIMINATING BARRIERS TO SPECIALIZED CANCER CARE FOR THE UNINSURED.** Loretta Gomez, RN, BSN, MSN, Pamela Rooney, RN, BSN, MSW, CCM, Elizabeth Traje, RN, BSN, and Althea Colbert, RN, BSN, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Cancer is a complex and catastrophic illness which encompasses many challenges for both patient and healthcare providers. According to the U. S. Census Bureau, Texas has the highest share of uninsured persons of any state with about one in four Texans lacked health insurance at some point. Among the largest metropolitan area, Houston led with almost 28 percent of its residents lacking health insurance.

The Case Management model developed at M.D. Anderson Cancer Center provides case management services to an uninsured group- Harris County patients, along a continuum of Cancer care for optimal clinical and operational outcomes in collaboration with two external healthcare systems.

Collaborative efforts in eliminating barriers include: an intake referral process, utilization of available resources, medical review for clinical trials, and transition of patient care to community when clinically appropriate.

These are all opportunities for quality patient care, appropriate specialized cancer treatment, continuity of care, patient education, physician collaboration, and collaborative resource utilization.

The Nurse Case Manager plays a vital role in the efforts by utilizing mechanisms that coordinate service delivery at the right time, in the most appropriate setting, and management within limited resource for efficient and optimal clinical and fiscal outcomes.

### 307

**PATIENT MEMORIAL SERVICES TO ASSIST ONCOLOGY STAFF BEREAVEMENT.** Laura Macmillan, RN, BSN, Massachusetts General Hospital, Boston, MA.

Oncology staff are often caught up in the intense activity and suffering that are associated with cancer care. They do not always have the opportunity to reflect on the special moments they spend with cancer patients or to process the grief they experience when a patient dies.

To provide meaningful bereavement experiences for staff

Oncology Nursing Staff planned and implemented an annual memorial service for patients who had died during the previous year. Readings and music were selected by a planning committee, and representatives from all the disciplines working on an inpatient oncology unit at an academic medical center were engaged to participate. The service was both formal and informal, including musical selections, planned readings, and candle lighting as deceased patients' names were read. There was also a time for anyone who so desired to come forward and share memories about individual patients with the audience. The service was held in the hospital chapel.

Attendance and verbal feedback provided valuable evaluation information. Thirty-nine people from a staff of 100 attended the service, and feedback about the event was very positive. Staff stated that they appreciated having a time to think about and reminisce about former patients in a setting that was unencumbered with the demands of daily care and activity. Staff also appreciated seeing patients' names in print and having an event dedicated to acknowledging the meaning of caring for them in spite of an unsuccessful outcome.

Oncology nursing practice can be stressful, frenetic, and sad. A memorial service provides for a planned "time out" to acknowledge the meaning inherent in caring for patients with cancer and the importance of the job staff do.

**CARING FOR THE PATIENT AFTER PELVIC EXENTERATION.** Margaret Lacetti, PhD, RN, AOCN®, Boston College Wm. F. Connell School of Nursing, Chestnut Hill, MA; and Corrina Lee, RN, BSN, Jolene Marangi, RN, BSN, Karen Tierno, RN, BSN, Flo Solari, RN, BSN, and Crystal Lynch, RN, BSN, Massachusetts General Hospital, Boston, MA.

Pelvic exenteration is extensive pelvic surgery done in response to recurrent cervical cancer. As a result of the surgery, patients experience problems that are responsive to nursing intervention, such as pain, diminished self esteem, changes in body image, sexuality, and management of changes in elimination and odor.

The purpose of this project is to develop and share a comprehensive plan of care for the pelvic exenteration patient based on experiences of nurses caring for these patients on a surgical gyn-oncology unit. The value is in making this comprehensive plan of care available to nurses who care for such patients infrequently, given the invasive nature of this surgery, often undertaken as a last resort in disease management.

Included in the plan of care are management and assessment techniques for pain, ostomy care, body image changes, sexuality and intimacy, mobility, wound healing, living with disease progression, anxiety and grief.

The plan of care is evaluated through application and appraisal with a variety of patients on the surgical unit over the last two years, utilizing patient response and progression to modify and improve nursing care.

Caring for patients who must learn to manage multiple problems that occur as the result of invasive disease management is the purview of the oncology nurse. Procedures such as pelvic exenteration, which are relatively uncommon, done as response to extensive disease, result in challenges to the oncology nurse. Participating in and developing the best possible care for these women is possible in an environment such as the unit where this plan of care was developed, as frequent opportunities to provide and evaluate care for patients with pelvic exenteration allows for determination of best practice.

**RADICAL VAGINAL TRACHELECTOMY TO PRESERVE FERTILITY IN THE TREATMENT OF EARLY CERVICAL CANCER.** Michelle Casale, RN, BSN, and Lois Almadrones, Memorial Sloan-Kettering Cancer Center, New York, NY.

Laparoscopic radical vaginal trachelectomy (LVRT) offers fertility preservation for women of childbearing age diagnosed with stage 1A2 or 1B1 squamous cell or adenocarcinoma of the cervix. This curative procedure is an alternative to standard radical hysterectomy and offers future fertility potential and better quality of life in women who meet eligibility criteria. Oncology nurses need to know the risks and benefits and eligibility criteria for LVRT in order to properly counsel candidates. Information about future fertility, contraception, and short- and long- term follow-up care are also part of nursing management.

It is estimated that 43% of women diagnosed with cervical cancer are of childbearing age; therefore, fertility may be a major concern for these women. Trained gynecologic oncologists may offer LVRT as a viable alternative to standard treatment in a select group of women. Strict criteria are applied to reduce recurrence risk. These criteria include the following: tumor is confined to cervix and measures less than 2cm and the woman desires future pregnancy.

Surgery includes the laparoscopic evaluation of the abdomen and pelvic organs and pelvic lymphadenectomy. Lymph nodes, the upper endocervical margin, and an endocervical curettage are assessed by frozen section analysis; all must be negative before proceeding with LVRT. Best outcome is achieved when the upper endocervical margin is free of disease by 8-10 mm. A cerclage is done to assure cervical competence during pregnancy.

LVRT is associated with less blood loss, shorter hospital stay, and shorter time to normal voiding patterns compared with radical hysterectomy. Follow-up includes colposcopic examination, including a Pap smear every 4 months for 2 years and every 6 months thereafter. Pregnancy is not recommended for 6-12 months after LVRT, and delivery is by cesarean section. Combined studies reported 96 pregnancies in 61 women post LVRT resulting in 51 live births.

This presentation will explain LVRT through pictures and film, discuss medical evidence-based research, and describe the nursing assessment,

management and unique counseling needed for these women and their partners. It will also discuss collaboration with high-risk fertility specialists and obstetricians recommended for optimal management after LVRT.

**USING PREOPERATIVE PORTAL VEIN EMBOLIZATION (PVE) TO INCREASE THE SAFETY OF HEPATIC RESECTION.** Lisa Wall, RN, PhD, OCN®, Memorial Sloan-Kettering Cancer Center, New York, NY.

Malignant tumors that originate in the liver or are metastatic from a colorectal primary are best treated with hepatic resection. The ability to resect a significant portion of liver is enhanced by the liver's ability to regenerate. Unfortunately, a liver that is diseased from cirrhosis or fatty infiltrates has diminished capacity to regenerate. Preoperative portal vein embolization (PVE) improves the safety of extensive liver surgery by redirecting portal blood flow to generate hypertrophy of the nondiseased portion of the liver. Nurses must be concerned with educating, supporting and assessing patients having this procedure.

The purpose of this presentation is to describe PVE, its rationale, and the nurse's role in supporting patients through this procedure. Using fluoroscopic guidance, tiny pellets are injected into the right or left portal vein, thereby, blocking off portal blood flow to the diseased lobe of the liver. The newly embolized lobe atrophies due to diminished blood supply. The alternate side grows in compensation. This increases the amount of healthy liver prior to resection and supports the patient's recovery from hepatic resection.

Nurses contribute to the safety of PVE throughout the process through education and assessment. Pre-procedure, renal and hepatic functions are evaluated. Nurses instruct patients to avoid medications that affect coagulation. This is important since many patients are at increased risk for bleeding due to low platelet counts from their underlying liver disease or recent chemotherapy. Validating the appropriate laterality of the procedure is essential. Post-procedure, the administration of hydration counteracts the effect of contrast dye used during the procedure. The nurse assesses for potential complications such as bleeding, infection and hepatic injury.

PVE is a well-tolerated procedure with minimal reports of complications. Four weeks after PVE, CT scan evaluates the degree of hypertrophy of the non-diseased liver. Assessment of patient readiness for hepatic resection and preoperative preparation commences.

In selective patients, PVE increases the safety of hepatic resection by ensuring the ability of the liver to regenerate and enhancing the amount of "healthy" liver prior to surgery. Nurses contribute to the safety of this procedure through patient assessment and education.

**ENHANCED QUALITY OF LIFE FOR ONCOLOGY SURGICAL PATIENTS WITH VACUUM-ASSISTED CLOSURE (VAC) THERAPY.** Debra Rodrigue, RN, Memorial Sloan-Kettering Cancer Center, New York, NY.

The development of VAC therapy has helped to revolutionize the approach used in the care of patients with difficult-to-treat wounds. VAC therapy has proven to be cost efficient, safe, and effective as a treatment modality in wound care while enhancing patients' quality of life.

The management of large cavity, nonhealing, draining surgical wounds can be challenging and time consuming for health care providers. Traditional methods of wound healing have been costly and painful to the patient. This is evident with especially hard to treat wounds with increased purulent drainage requiring frequent dressing changes. Patients who suffer with increased drainage and malodorous wounds have a profound negative impact on their quality of life. Most surgical wounds heal without incident but compromised wound healing requires longer hospital stays and a skilled plan of care.

A new method for wound management, VAC therapy is a technique that applies negative pressure to a wound bed through porous, open-cell foam that fills the wound cavity. At this NCI- designated comprehensive cancer center the placement of a wound VAC has become a widely utilized tool saving healing time and requiring less frequent dressing changes. Since VAC dressings can be left in place for 2-4 days it eliminates frequent daily dressing changes which can be time consuming and painful for the patient. VAC therapy has been successful in treating dehiscenced incisions, deep, superficial, acute and chronic wounds. It is also effective in treating Stage III and IV pressure ulcers.



VAC treatment is beneficial for patients and health care providers. The utilization of a wound vac in the hospital setting shortens length of stay and is easy to manage for the health care provider. The use of a portable wound VAC allows the patient to heal at home and leads to enhanced quality of life for our patients.

VAC therapy has been proven to be an effective treatment modality in wound care. The advantage of a wound VAC includes rapid wound healing, reduced pain, shorter hospital stays, lower medical costs, and reduces the frequency of dressing changes needed.

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**REDUCING SURGICAL SITE INFECTIONS IN SURGICAL ONCOLOGY PATIENTS RECOVERING FROM TOTAL ABDOMINAL HYSTERECTOMY OR COLON RESECTION.** Laura Connelly, MA, RN, CCRN, Judith Gerst, RN, MHA, CPHQ, Evelyn Marinas, BSN, RN, OCN®, and Elizabeth Fogarty, RN, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Oncology patients often undergo surgery as a treatment intervention for cancer. Surgical site infections are a serious threat to the patient's recovery. The surgical oncology patient may undergo surgery first or after a chemotherapy and/or radiation therapy regimen has been completed. The disease process itself places the oncology patient at a higher risk for infection. Current nursing research does not reflect the issues faced by the surgical oncology patient as most of the literature focuses on the general surgery patient.

The objective of this project was two fold. The nurse investigators posited the nursing care delivered by the bedside nurse directly affects the progress and recovery of the surgical oncology patient. Effective nursing interventions greatly improve the surgical oncology patient's outcome. The investigators also proposed that the medical treatment course for the colon resection patient differs from the gynecological patient requiring a comparison of the two populations.

Thirty patients from the Gynecological floor recovering from total abdominal hysterectomy and thirty patients from the General Surgery floor recovering from colon resection were examined. Seven specific nursing interventions were bundled together for each floor. Compliance with ambulation, activity, incentive spirometry, incision care, and pain assessment were measured. Dressing changes, daily goals and return of GI function were monitored as well.

The Institution's definitions for surgical site infection were used. Nurses performed the seven specific nursing interventions for the surgical patient recommended by the Institute for Healthcare Improvement. Nurse investigators anticipated that the rate of infection in these populations would reach the goal of 1.5% utilizing the nursing intervention bundles.

Results should validate the Institute for Healthcare Improvement's recommendations for the nursing care of the surgical patient. Anticipated results should indicate a decrease in the infection rates for both oncology populations due to focused nursing intervention bundles. Gynecological patients undergoing surgery as a primary treatment modality should reach the goal. Colon resection patients may not reach this goal as chemotherapy and radiation may be offered before surgery. Data are currently being entered for analysis.

### 313

**EDUCATION OF THE ONCOLOGY NURSE TO MANAGE THE POST-OPERATIVE PATIENT WITH A FREE TISSUE TRANSFER.** Barbara Satterwhite, RN, MS, BC, AOCN®, and Virginia (Ginny) Bowman, RN, MS, AOCNS, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Both function and cosmesis can be compromised with ablative cancer surgery. Historically, some oncology patients undergoing surgery had little hope of restoration of function, much less cosmesis. With the strides in microvascular surgery, patients now have reconstructive options to restore that which was lost. Free tissue transfers have revolutionized rehabilitation of the patient who undergoes radical cancer surgery. The role of the oncology nurse is integral to a successful post-operative course for patients who have free tissue transfers.

In our comprehensive cancer center, patients who have a free tissue transfer are located on a specific inpatient unit. Nurses who work on this unit must be knowledgeable and clinically proficient regarding management of these patients. This includes: disease process; type of surgery; patient assessment; incision/drain care; and implications/complications of the surgery. The educational process for introducing the nurse to

management of these patients begins during orientation and continues throughout employment.

A combination of strategies is used to educate the nurse. For the new nurse, orientation experiences include: classroom presentations; readings; clinical practicums; and review of online resources. In addition, a clinical coach is paired with the nurse to facilitate the "hands on" experiences at the bedside. Following successful completion of orientation, the nurse has the opportunity to participate in on-site continuing education courses to further his/her knowledge regarding free tissue transfers.

Both formative and summative evaluations of the new nurse occur during the orientation phase. The nurse, clinical coach, associate director, and instructor meet on a periodic basis to review the nurse's progress, discuss issues related to clinical practice, and plan for the necessary orientation experiences. Each conference is documented. In addition, an Orientation Pathway is used to document the performance of the nurse. The new nurse has the opportunity to evaluate both the orientation process and the assigned clinical coach. Also, the clinical coach and associate manager provide evaluative input from their perspectives. Regarding continuing education, the nurse participant evaluates each offering.

The nurse is an integral player on the interdisciplinary team regarding managing the post-operative free tissue transfer patient. The process used to educate the nurse may be adapted to settings other than a comprehensive cancer center.

### 314

**LIONS AND TIGERS AND TRACHEOSTOMIES, OH MY!!!** Ellen Tanner, RN, BSN, OCN®, National Institutes of Health, Bethesda, MD.

Topic: Tracheostomy patients are at high risk for adverse outcomes due to communication difficulties and the potential for life-threatening emergencies. Inpatient nurses already have a complex patient load and require well developed skills if they are to be knowledgeable and accommodate the unique needs of this population.

Purpose: Since tracheostomy patients were a new population for our unit, the goal was to create a safe and effective care environment.

Interventions: An educational program was developed to build fundamental skills in the care of patients with a head and neck malignancy requiring tracheostomy. Content includes principles of tracheostomy care, the rationale for various types of tracheostomy tubes and the components of the tracheostomy emergency kit. Through a rotation in the Ear, Nose, and Throat clinic nurses develop skills in patient assessment and tracheostomy care. Use of a simulation lab, provides an opportunity to practice the management of spontaneous decannulation, and to demonstrate skills in recannulation. One minute web-based videos reinforce the management of other tracheostomy emergencies.

Evaluation: Each nurse demonstrated the standard of practice for tracheostomy care and accurately identified respiratory insufficiency, stridor, subcutaneous emphysema, speech and swallowing problems, and the proper use of the speaking valve. Nurses also demonstrated emergency measures to manage decannulation, obstruction, and bleeding.

Discussion: Although there was initial resistance, with practice changes and educational support, the needs of patients with tracheostomies have been effectively met. To optimize clinical outcomes and promote safety, caseloads are balanced with lower acuity patients, and patients with tracheostomies are accommodated near the nurses' station, and with their rooms clearly identified. Tracheostomy patients are cared for by a team of primary nurses to promote continuity of care, and assignments are made to afford nurses the opportunity to maintain their skills. An environment is fostered in which questions, experiences and the lessons learned in the care of these complex and challenging patients are shared. As a result of this program, we have received positive feedback regarding care quality from both physicians and patients, and nurses report that they are confident in their ability to meet the unique needs of a patient with a tracheostomy.

### 315

**MULTIDISCIPLINARY CARE OF THE PATIENT RECEIVING A HEMIPELVECTOMY.** Carol Allgeyer, RN, OCN®, Patricia Sanders, RN, BSN, OCN®, and Polly James, BSN, MSN, CNS, OCN®, James Cancer Hospital and Richard J. Solove Research Institute, Columbus, OH.

The incidence of bone and soft tissue sarcomas is low compared with other malignant tumors. When these tumors involve the sacrum and

pelvis and hip joint, hemipelvectomy is often required in order to achieve cure for the patient. If the tumor has metastasized, this surgery is generally not an option. This surgery requires surgical removal of the affected parts of the pelvis along with the involved lower extremity. The nurse plays a key role in coordinating and providing assessment, symptom management, education, emotional support and motivation both pre and post operatively. It is vital that the nurse has a working knowledge of all issues involved with patient care delivery in order to achieve positive patient outcomes.

The purpose of this presentation is to raise the awareness and prepare nurses to care for patients requiring surgical intervention with external hemipelvectomy.

Nurses and other multidisciplinary team members were provided a Power Point presentation and educational packet utilizing the Nursing Grand Rounds format. Patient needs determine necessary contracted services including, but not limited to, physical therapist, occupational therapist, dietician, enterostomal therapist, social worker, mental health clinical nurse specialist, respiratory therapist, pharmacist, pain care practitioners, patient care resource managers, in patient rehabilitation facility, and home care. Interdisciplinary care conferences are conducted weekly and pm in order to better coordinate care.

The goal is that the patient will progress along the continuum of care with minimal delays/complications. Comprehensive education of staff, together with coordination of patient care, facilitates timely interventions, shorter hospital stays and positive patient outcomes.

It is important for the oncology nurse to understand the treatment, management and guidelines in caring for patients with external hemipelvectomy. Regaining independence is often a slow and painful process. The multidisciplinary care encompasses pain control issues including phantom limb pain, mobility, nutrition, wound care, management of ostomies, psychological and social issues. These patients face radical changes in lifestyle and self-image. Experienced nurses providing care for the hemipelvectomy patient are vital to positive patient outcomes in the timely transition of patients from the in patient setting to out patient setting.

### 316

**VALIDATION OF A CANCER RELATED FATIGUE QUESTIONNAIRE BY ONCOLOGY NURSE MANAGERS AND EDUCATORS WITHIN AN INTEGRATED HEALTH CARE SYSTEM.** Donna Colabroy, RN, OCN®, Joan Scialpi, MSN, RN, OCN®, Jonathan Gapilango, MSN, RN, OCN®, Raylene Langish, RN, BSN, OCN®, Indu Lew, PharmD, and Robert Adamson, PharmD, Saint Barnabas Health Care System, West Orange, NY.

Fatigue is a complex and multi-factorial disorder. An estimated 60 to 85% of cancer patients in treatment experience fatigue. The Oncology Nurse Managers and Educators, within an eight hospital integrated health care system, evaluated the assessment and interventions employed for the management of cancer related fatigue. It was determined that a standardized process did not exist for fatigue assessment or management.

The purpose of this research is to test the validity of a Cancer Related Fatigue Questionnaire.

In conjunction with pharmacists, nutritionists, physicians and nurses, a review of the literature was conducted on measurement tools for areas such as anemia, sleep disturbances, nutrition, and emotional distress related to cancer. A Cancer Related Fatigue Questionnaire, comprising of twelve questions was developed and approved by the Institutional Review Board. The questionnaire and implied consent form was administered to the patient. Questionnaires were de-identified to protect patient identity. All adult patients greater than 18 years of age and receiving cancer chemotherapy or radiation therapy within the Outpatient Oncology Centers were included in the study. Return of the completed questionnaire indicated implied consent.

If the patient answered yes to being fatigued in the last week and rated their fatigue as 3 or greater on a 10-point scale, patients completed the entire questionnaire. The remainder of the questionnaire focused on the following three domains: emotional distress, nutritional deficiencies, and sleep disturbances. Nursing Managers recorded the patient's hemoglobin on the completed questionnaire. Patients were considered anemic if their hemoglobin was less than 12 gm/dL. Validation of the questionnaire will be ascertained if a minimum of 65% of patients indicated that they are experiencing fatigue.

Of the 76 completed questionnaires 81.6 % of patients (n=62) indicated that they were experiencing fatigue and rated their fatigue as 3 or greater on 10-point scale. Fatigue was related to nutritional deficiencies, emotional distress; sleep disturbances and anemia in 75.8%, 79%, 87.1 % and 75.8% respectively.

This questionnaire can serve as an informative screening tool to determine which patients are suffering from fatigue and isolating the etiology of their fatigue.

### 317

**IS NAUSEA AND VOMITING STILL A PROBLEM FOR HIGH-DOSE THERAPY PATIENTS? USING EVIDENCE TO GUIDE OUR CARE.** Morgin Dunleavy, RN, BSN, Janelle Wood, RN, BSN, June Eilers, PhD, RN, BC, CS, and Nikki Miller, PharmD, Nebraska Medical Center, Omaha, NE.

Chemotherapy induced nausea and vomiting (CINV) is a significant problem for patients, families, and caregivers in oncology. Studies indicate that discrepancies exist between the professional perception and the patient's experience of CINV. Understanding the mechanisms behind nausea and vomiting and the treatment options available is important in order to anticipate patient needs and provide better symptom management, thus improving patient outcomes. Although there has been extensive research in the area of CINV, evidence regarding the best approach for multi-day, high-dose therapies remains limited.

The purpose of this project was to address CINV for patients receiving multi-day, high-dose chemotherapy treatments and to establish a standardized approach for assessment and management in our patients.

This project was guided by the National Comprehensive Cancer Network and Multinational Association for Supportive Care in Cancer clinical practice guidelines. The Hesketh emetogenic potential guidelines were used to determine the likelihood of CINV on each treatment day. Through patient and nurse interviews we have been able to track the prevalence of nausea and vomiting throughout the different protocols and treatment days and determine discrepancies between nurse and patient perception of CINV. We have focused on improved documentation of nausea and vomiting using a 0-10 scale and have compared nurse and patient perceptions of the management of CINV. Education was provided to nursing staff and patients on the differences between nausea and vomiting, including acute versus delayed, and the mechanisms involved.

Data collected showed we have better symptom management with acute nausea and vomiting, but need to continue to address control of the delayed nausea and vomiting experienced by many of our high-dose therapy patients.

Improving the management of nausea and vomiting in the multi-day, high-dose chemotherapy population will increase their quality of life and help to achieve favorable patient outcomes. Nursing has a key role in identifying those at greater risk for experiencing CINV, accurately assessing the patient's experience, and implementing appropriate interventions. This project can guide nurses in the management of CINV for patients receiving multi-day, high-dose therapies. The process used could be adapted to address management of other symptoms in patients with cancer.

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**USE OF THE DISTRESS THERMOMETER AS A MEANS OF EFFECTIVELY ASSESSING EMOTIONAL DISTRESS IN PATIENTS WITH CANCER.** Jean Madden, RN, BSN, OCN®, Sentara Leigh Memorial Hospital, Norfolk, VA.

The phenomenon of emotional distress, most frequently manifested as depression and anxiety in patients with cancer, is a common problem that is under-assessed by oncology nurses who traditionally tend to focus primarily on the physical aspects of their patients' care. As a result of these multiple challenges, patients with cancer often experience the phenomenon of distress without appropriate support from their oncology nurses.

An assessment tool for emotional distress is outlined as a means of assessing patients with cancer at all stages of their disease. Oncology nurses traditionally receive little education or training for assessing patients' psychological status; a standardized tool provides consistent assessment for a problem common to patients with cancer.

Oncology nurses can use the Distress Thermometer to rapidly and efficiently assess their patients' emotional distress. The Distress Thermometer

is a visual analog scale, measuring distress from 0 (none) to 10 (extreme). Oncology nurses who assess their patients for pain and fatigue are familiar with such scales, which, along with the 6-category, 36-item checklist, take about 1-2 minutes for patients to complete.

The Distress Thermometer is highlighted because of its ease of use and accurate assessment of distress, as well as its endorsement by the NCCN as part of its distress clinical practice guidelines. Oncology nurses are responsible for monitoring their patients' psychological QOL just as much as their physical QOL, throughout the trajectory of their illness.

Distress is a common psychosocial issue that can radically affect cancer patients' QOL. It is essential that patients be closely monitored to determine who may require ongoing care. Although barriers to psychological assessment do exist, oncology nurses can become proficient in assessing for distress, using the Distress Thermometer. Oncology nurses can assist patients in resolving their symptoms of distress, allowing them to enjoy a better QOL.

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**USING THE AIM HIGHER PROCESS TO IMPLEMENT A MULTISYMPOM PRECHEMOTHERAPY RISK ASSESSMENT TOOL.** Jill Fallon, RN, CRNI, MSN, OCN®, Eastern Connecticut Hematology and Oncology Associates, Norwich, CT; and Cathy Fortenbaugh, MSN, AOCN®, Pennsylvania Oncology and Hematology Associates, Philadelphia, PA.

Patients being treated with chemotherapy are at risk of developing treatment-related symptoms. A proactive approach toward risk assessment can minimize or prevent many of these symptoms. Nurses in the AIM Higher Initiative developed a tool to assist clinicians in the identification of patients at the prechemotherapy stage who are at risk for multiple chemotherapy-related symptoms. This tool takes into account individual risk factors as well as those due to chemotherapeutic treatment. It also streamlines the assessment of the symptoms of chemotherapy, including anemia, neutropenia, nausea, vomiting, diarrhea, constipation, depression, anxiety, neurotoxicity, peripheral neuropathy, cardiac toxicity, hand-foot syndrome, and mucositis.

To describe how the AIM Higher process was used to successfully implement the risk assessment tool

The AIM Higher process involves 3 steps: analysis of the practice, development of a quality improvement plan, and implementation of that plan. Analyzing the practice and developing the plan entail deciding how and when the risk assessment tool will be used and who is responsible for collecting the information.

The risk assessment tool has been most effective in helping to achieve positive patient outcomes when it is used before the patient's first cycle of chemotherapy. Several AIM Higher practices implement the tool during their prechemotherapy class, allowing providers to both assess risk and teach patients how to be proactive in the management of their side effects. This is an important step, as the tool must be effectively implemented to ensure its usefulness. It is of note that the presence of >1 risk factor

indicates that the patient may be at greater risk of developing symptoms and may require additional intervention, including customized patient education.

A comprehensive understanding of how a practice functions is imperative for the successful development of a plan for the implementation of a risk assessment tool. When risks are identified, solution pathways, standing orders, and focused education for the prevention and management of symptoms can be effectively implemented.

### 320

**DISTRESS ASSESSMENT: IMPLEMENTING GUIDELINES.** Caryl Fulcher, MSN, APRN, BC, Kerry Harwood, RN, MSN, and Tracy Gosselin, RN, MSN, AOCN®, Duke University Health System, Durham, NC.

A current nursing challenge is to assure that practice is evidence based, and one method to accomplish this is to use guidelines created by experts. However, many complain that such guidelines are not suitable in their setting, or that guideline implementation would result in the need for more resources to meet the identified needs. The National Comprehensive Cancer Network (NCCN) Guidelines for Distress Management are one such example. Designed to meet the standard that psychosocial needs should be assessed at intervals in all oncology patients, many settings have not implemented the guidelines for fear their mental health and social work resources would be overwhelmed with new business.

The purpose of this poster is to describe the implementation of a feasibility pilot and subsequent adoption by that clinic of a process to assess patient distress. Social work, pastoral care and mental health provider usage was tracked and tool burden and benefit were evaluated.

The feasibility pilot was designed to fit as closely as possible with the RN's current assessment practice. Goals included making the process convenient for staff and patients and providing the opportunity for ongoing staff feedback during the pilot. Specific patient problems identified led to the provision of educational resources and level of distress scores (0-10) dictated referral for those scoring >5 per the NCCN recommendation.

At the conclusion of the pilot, the participating nurses were polled on the process. They rated the benefits as well as the burden of the tool on their workload, and they also rated their perception of the burden it placed on patients. Additionally, numbers of referrals to the targeted resources (pastoral care, oncology social work and mental health) were calculated before and during the pilot.

The nurses felt that, with some adjustment in assessment frequency, the distress assessment should be incorporated into their practice. The referrals made did not overburden the resource disciplines, and all staff felt pleased to be offering more comprehensive assessment, education and services to patients in their clinic. Other oncology nurses could benefit from this project's lessons as they attempt to incorporate distress assessment in their settings.



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**ONS Annual Business Meeting/Town Hall**  
**Saturday, May 6**

The annual meeting of members shall be held for the purpose of accepting the results of the election of officers, directors, and Nominating Committee members; receiving the annual reports of the Board of Directors and teams; and transacting such other business as may properly come before the meeting. Copies of the annual reports presented will be available at the business meeting.

*See the Congress Syllabus for the meeting location.*

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