2016 Oncology Nursing Society Annual Congress: Late-Breaking Poster and Podium Abstracts

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POSTER ABSTRACTS

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DISTRESS SCREENING: A PILOT STUDY UTILIZING THE EDMONTON SYMPTOM ASSESSMENT (ESAS) SCALE IN COMMUNITY ONCOLOGY.

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Patient distress in response to a cancer diagnosis and related psychosocial issues is well documented. In 1997 the NCCN formed a multidisciplinary team to address the challenge of integrating distress screening into routine cancer care. In 1999, the NCCN stated, "distress should be recognized, monitored, documented and treated promptly at the initial visit and as clinically appropriate." However, in 2016 distress screening and access to quality interventions is far from universal or standardized. A comprehensive approach used by an interdisciplinary team can ensure that these standards be integrated in an outpatient setting. A cross-sectional pilot study was conducted at a community cancer center in Austin Texas to test the feasibility of the Supportive Care Screening Questionnaire (SCSQ). This questionnaire includes the Edmonton Symptom Assessment Scale (ESAS) and a patient needs assessment form. During the 90 day feasibility study, the SCSQ was used to assess distress by interdisciplinary clinic staff. 78 patients beginning chemotherapy treatment participated. Patients were screened for depression (n=77) and anxiety (n=75). ESAS scores were greater than 4 for 17% on depression and 22% on anxiety. Patients reported concerns with: personal appearance/hair loss (33%), nervousness (26%), depression (23%), fear (19%), sexual health (9%), impact on family (19%), and employment (13%). Patients were contacted by a Social Worker (SW), when they requested follow up (37%). 90% had a phone call with the SW to evaluate screening results. Further intervention included brief supportive counseling with the SW and/or referral to outside support resources. Documentation of distress screening in EHR was 96% making this critical information available for the whole health care team. Distress screening serves to link patients to appropriate psychosocial professionals and community resources in order to improve coping and quality of life during their cancer journey. Identifying the correct assessment tool and time intervals for assessment in a patient's treatment is a critical element from the 2012 Commission on Cancer. While this pilot demonstrates the screening process is feasible in a community clinic with a structured implementation process, further evaluation is needed to identify the critical follow up points for ongoing distress screening through the cancer continuum.

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ADVANCING PATIENT AND CAREGIVER EDUCATION ABOUT IMMUNO-ONCOLOGY UTILIZING ANALOGIES TO TRANSLATE COMPLEX TOPICS.

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Nurses are critical when providing education to patients and their caregivers, and in many practices provide the majority of disease, treatment, and symptom management education. Starting a new treatment is often overwhelming for patients and caregivers. Patients want to know how their treatment works and what to expect. Unlike other cancer treatment modalities that directly target cancer cells, immuno-oncology (I-O) therapies work with the immune system to fight cancer. A current challenge exists, however, in explaining the role of the immune system in cancer and how I-O therapies may work differently from traditional cancer treatments. This is in large part due to a lack of available resources. To address these challenges, we led a co-creation workshop with nurses and other healthcare providers to identify and analyze I-O educational needs. Participants engaged in hands-on activities to design resources that would fill these educational gaps. Outcomes of the workshop included drafted educational materials that contained analogies and topics to help nurses communicate information about I-O to patients. After the workshop, the draft resources were validated by patients and caregivers in order to obtain and assess qualitative feedback on their overall effectiveness. Feedback was gathered in the form of structured interviews and an online survey completed by patients and caregivers (N=293). The interviews and survey aimed to assess respondent preferences for analogies, visuals, and overall delivery of information. Patient and caregiver validation showed that the majority preferred the balance/scale analogy (n=121), followed by the garden analogy (n=104). Patients and caregivers cited that resources that used an appropriate tone, simple language, visuals, and analogies were helpful to explain a complex topic like I-O. Through our co-creation process, we were able to efficiently and effectively create resources with the use of visual tools and simple language that address the challenges nurses face when educating patients on a new treatment modality. Utilizing these resources will help nurses communicate complex topics to patients in a simple, easy-to-understand format. They will also help patients and caregivers understand treatment options, which will ultimately lead patients to have more informed discussions with their healthcare team.

Underwriting: Bristol-Myers Squibb

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PERCEIVED NEEDS, PREPAREDNESS, AND EMOTIONAL DISTRESS OF MALE CAREGIVERS OF FEMALE POST-SURGICAL GYNECOLOGY/ONCOLOGY PATIENTS.

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Surgical gynecology/oncology (gyn/onc) patients are often discharged home with a new or recurrent cancer diagnosis and with multiple, complex post-surgical needs, including medication compliance, surgical incision care, drain or ostomy care, pain management, and emotional support. The family caregiver plays a pivotal role in recovery and prevention of readmission to the hospital. The experiences and needs of male caregivers during this critical transition from the hospital to home have not been well described. The primary aim of this study was to describe the perceived needs, preparedness, and emotional distress of male caregivers of post-surgical gyn/onc patients. Secondary aims were to describe: (1) correlates of caregiver needs, preparedness, and distress; (2) the relationship between distress and preparedness; and (3) the moderating role of distress on the relationship between preparedness and perceived needs. A descriptive, correlational design was used to examine needs, preparedness and emotional distress in a convenience sample of 50 male caregivers of gyn/onc patients. Measures were taken at two time points: within 48 to 72 hours of admission and 5 to 7 days post-discharge. Instruments included the Comprehensive Needs Assessment Tool for Cancer Caregivers (CNAT-C), which consists of eight domains; the Preparedness for Caregiving Scale; and the NCCN Distress Thermometer. The analysis consisted of descriptive statistics, t-tests, and univariate models to identify associations. During hospitalization and post-discharge, the highest CNAT-C domain scores were needs related to the health care staff and information. Young caregiver age was statistically associated with greater needs in four domains of the CNAT-C. Perceived preparedness scores were mid-range on average and caregivers felt more prepared post-discharge ($p = .013$). There was a statistically significant reduction in mean score for emotional distress, from 5.50 at time one to 2.98 at time two ($p < .0001$). Perceived preparedness was not statistically related to distress. However, when controlling for preparedness, increase in distress was associated with greater needs at both time points. The results underscore the importance of providing relational care and maintaining communication with male care givers during the transition from hospitalization to home. Routine screening for distress and needs is needed to identify vulnerable male caregivers.

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STUDY OF LEPTOSPERMUM HONEY IN THE TREATMENT OF RADIATION DERMATITIS IN BREAST CANCER PATIENTS RECEIVING EXTERNAL BEAM RADIATION.

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Client allergies limit management options for radiation-induced moist desquamation. This study is important because it is the first independent randomly-assigned, controlled clinical trial comparing the non-inferiority of Leptospermum honey dressings with silver sulfadiazine cream on radiation induced moist desquamation wound healing in breast cancer; potentially affording an alternative for women with sulfa allergies. The primary purpose of this study was to determine whether honey dressings were non-inferior to silver sulfadiazine cream (i.e., conventional treatment) with regard to healing time, pain score, and infection rate among female breast cancer patients experiencing radiation-induced moist desquamation. The study design included random assignment, active control, non-inferiority comparison at a single site. Data were collected over 18 months in the radiation oncology department at a community cancer center. Silver sulfadiazine cream was the active control while the honey dressings were the experimental treatment. A researcher-developed assessment tool was implemented to capture the outcome variables (i.e., time to moist desquamation resolution, infection, participant-reported maximum participant-reported pain level) on routine clinic days and as needed. Pain

level was not significantly impacted by type of intervention, F (2, 40) = .137, p = .26. Moist desquamation resolution time was not significantly different between Leptospermum medicinal honey (M = 5.87, SD = 2.69) and silver sulfadiazine (M = 9.10, SD = 4.98; t (25) = 1.71, p = .09, two-tailed). No infections occurred in either treatment group. Leptsopermum honey was non inferior to silver sulfadiazine among women with external radiotherapy-induced radiodermatitis of the breast. Leptospermum honey can be used as an alternative treatment in women with a sulfa allergy or preference for honey. Innovation Few studies have looked at the use and effectiveness of leptospermum honey in the treatment of radiodermatitis. Results of this study give radiation practitioners an alternative option to offer patients.

Underwriting: J. Patrick Barnes Research Grant—The Daisy Foundation

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UNDERSTANDING DISTRESS IN BREAST AND GYNECOLOGIC CANCER SURVIVORS: A MIXED METHODS STUDY.

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Breast (BC) and Gynecologic (GYN) cancer survivors' treatment require frequent, multidisciplinary, collaborative therapies. Cancer treatment can produce physical, social and emotional burden in the survivor that negatively impacts transitions from patient to person. Since the Institute of Medicine (IOM) recommendation, "Cancer Patient to Cancer Survivor", clinicians are exploring ways to integrate comprehensive distress assessment into clinical settings. This study aimed to understand distress experiences of BC & GYN cancer survivors, supportive care received from cancer teams, and the feasibility and reliability of the National Comprehensive Cancer Network Distress Thermometer (NCCN DT). A mixed method study was conducted using a focus group format to characterize distress in the GYN and BC cancer survivors. BC and GYN survivors were consented, and participated in semi-structured interviews. There were 9 BC and 10 GYN cancer survivors with average NCCN DT score ratings of 3.33 and 3.0, respectively. The focus group revealed 47.4% reporting at least one source of distress. GYN survivors reported higher practical (60% vs. 33.3%) and physical problems (90% vs. 77.8%) compared to BC survivors. No differences in emotional needs were observed. Two BC and one GYN cancer survivors reported provider-based physical assessment, however, this tool did not screen emotional distress. The NCCN DT captured most sources of distress for both groups, except difficulties navigating the system and communication between specialties. The BC group echoed improved distress with assistance from nurse navigators (33%) and attending support groups (66%). However, GYN survivors noted lack of provider-based services, and reported navigating the system on their own and relying on self-supportive resources. This study documented notable differences in distress screening and management between both groups. Developing a model to universally screen and manage distress within existing institutional support care services is essential to meet survivors' needs. Nurses can play a role by assessing distress at intervals, collaborating with multidisciplinary teams to navigate survivors to supportive care services, and measuring outcomes. This study will help to inform interventions for tailored distress screening and utilization of supportive resources in clinical settings for overall well-being.

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HISTORY OF BREAST FEEDING AMONG AFRICAN AMERICAN WOMEN WITH A BREAST CANCER DIAGNOSIS: SOME RESEARCH STUDIES SUGGEST BREASTFEEDING DECREASES THE INCIDENCE OF BREAST CANCER IN WOMEN.

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For African American (AfAm) women, the "ever" breast feeding rates have been low, reported as 58.1% (versus 73%–83% for four non-AfAm groups) from 2000–2007 in the US. A few studies have revealed a lack of breastfeeding may be associated with an increase in the aggressive type of triple negative breast cancer [TNBC] (without receptors for estrogen, progesterone or the human epidermal factor) in AfAms. No studies done in South Carolina population. For oncology nurses, their relationships with patients could solidify research results and create a national education program targeting AfAm women to alter breastfeeding practice and potentially affect incidence of this aggressive TNBC. This innovative study was a retrospective review of 697 records from an inherited breast cancer clinic that identified 289 women with a diagnosis of breast cancer between 2006 and 2015. Self-reported data was collected about hormone-associated risk factors, including breastfeeding, and pathology reports were abstracted for breast cancer biomarkers. All data was double-checked for accuracy by three researchers and analyzed using SPSS. Pearman-R and T-tests were used to calculate results. Data analysis suggests a relationship between lack of breastfeeding and incidence of TNBC in AfAm women. The AMBER Consortium study found similar results using a questionnaire. A few other studies have found similar results, but with less statistical strength. Our results suggest increased breastfeeding by AfAm women could decrease the incidence of TNBC. Because younger AfAm women are diagnosed with TNBC these results suggest an educational intervention could affect the incidence. Developing a simple educational program much like breast self exam, interdisciplinary teams from oncology nursing, public health, physician offices and school nursing could implement programs that would target different age groups of AfAm girls and women (perhaps men and boys) for schools, churches, doctor's offices and community center settings. Further research could look at long-term results on breastfeeding practice, changes in attitude toward breastfeeding, and if there was any change in incidence of TNBC in AfAm women.

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EFFECT OF BLOOD GLUCOSE IN PATIENTS WITH DIABETES AND BREAST CANCER DURING CHEMOTHERAPY.

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As population ages the need for medical management increases for those patients with diabetes and breast cancer undergoing chemotherapy. Preexisting complications from diabetes are often exacerbated with chemotherapy, lowering ability to tolerate treatment resulting in higher rates of recurrence and toxicities. The purpose of this study is to identify and describe association between glycemic level (BS) and ability to complete chemotherapy in females diagnosed with breast cancer with pre-existing diabetes. Design: Exploratory, retrospective, descriptive, observational study. Methods: Data collected from 101 electronic medical records with dual diagnosis of breast cancer and diabetes divided into two groups

based on ability to complete chemotherapy. Population was described using mean/SD or frequency. Comparisons involving categorical variables were performed using the chi-square or Fisher's exact test. Continuous variables were compared using Student's t test. A two-sided P value <0.05 was considered significant. Multivariate logistic regression used to examine predictors ability to complete chemotherapy. Odds ratio (OR) and 95% confidence interval (CI) were reported for the logistic regression analysis. SAS 9.3 was used for the analysis. Results: Groups were similar in demographics, BMI, breast cancer staging, chemotherapy, number and type of co-morbidities, and usage of hypoglycemic agents. Patients unable to complete chemotherapy (54%) were more likely to have higher pre/post-elevated BS (95% CI p <0.0171), a BS change of +/- 20 points during chemotherapy (p < 0.0160), was associated with greater cardiac, respiratory, and renal toxicities. Study suggests that optimum BS during chemotherapy is less than 171. In this study glycemic levels did affect ability to complete therapeutic chemotherapy in breast cancer patients with prior diabetes. The small population size limits generalizability and more research is needed. This is the first study that correlates and demonstrates specific parameters in target population allowing positive outcomes that can be objective monitored by oncology nurses.

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IMPLEMENTATION OF AN EVIDENCE-BASED STRATEGY TO IDENTIFY AND MANAGE SUBSTANCE USE IN CANCER.

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Risky substance use, including alcohol and drug use, during cancer treatments confers significantly worse quality of life outcomes for patients, including problems with pain, sleep, dyspnea, total distress, anxiety, coping, shortness of breath, diarrhea, poor emotional functioning, fatigue and poor appetite. Screening, brief intervention, and referral to therapy (SBIRT) is an approach to identifying and managing risky substance use that has been successfully implemented in primary care and emergency room medicine. Its use in oncology clinics has not yet been studied. This non-experimental quality improvement project used evidence-based methods to implement a screening and intervention program in the radiation oncology clinic in this NCI-designated Comprehensive Cancer Center. There were three implementation components: 1) 29 staff members attended some or all of four motivational interviewing training sessions; 2) an electronic documentation infrastructure using validated instruments for SBIRT (AUDIT-C and ASSIST) and clinical decision support tools were developed and incorporated into the electronic medical record; and, 3) electronic toolkits with SBIRT resources, including cancer-specific handouts, were made available on every computer in the clinical areas. The clinic achieved 54% median screening rate over the initial 9-week implementation period (218 screened/407 patients seen in consult). Of the 218 patients screened, 14.7% screened positive for risky alcohol or drug use and 46.9% of those patients received a brief intervention. There were no notable differences in patient flow through the clinic and no noted negative outcomes associated with the implementation of this project. The incorporation of SBIRT screening and management techniques into the workflow of a busy radiation oncology clinic was feasible. Given the poor outcomes associated with risky substance use in oncology patients, tools such as these may be a valuable method to improve patient care outcomes. This project successfully developed standardized training protocols for oncology-specific SBIRT techniques. Future research should tie patient outcomes to proactive screening and management of risky substance use. The use of validated screening tools and evidence-based substance use management interventions is feasible and sustainable in an outpatient oncology setting.

Underwriting: AACN/CDC

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SYMPTOM CLUSTERS AND CLINICAL OUTCOMES IN PATIENTS UNDERGOING SURGERY FOR PANCREATIC CANCER.

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Symptom cluster (SC) research in many cancer types is rapidly growing; however, research focused on this phenomenon in pancreatic cancer (PC) is limited. Prior research has documented that PC patients experience multiple symptoms and that these symptoms may have a negative influence on quality of life (QoL). No research has examined SCs or the relationship between SCs and clinical outcomes over time in postoperative PC patients. The aims of this study were to examine the presence of SCs and the impact that SCs have on QoL and survival in patients with stage II PC before surgery and at 3, 6, and 9 months after surgery alone or with adjuvant therapy. This exploratory, longitudinal study was conducted within a randomized clinical trial (parent study). Patients (N=143) undergoing surgery for stage II PC were recruited through the parent study located at a National Cancer Institute-designated cancer center in the northeastern United States. Symptom and QoL data were measured by the Functional Assessment in Cancer Therapy: Hepatobiliary Cancer Tool. Deaths were confirmed through the Social Security's Death Index, obituaries, or family reports. Statistical methods included exploratory and confirmatory factor analyses, simple linear regression, Cox proportional-hazards modeling, and Kaplan-Meier analyses. 16 distinct SCs were identified within 9 months of surgery. Significant relationships were found between increased severity of 13 SCs and decreased QoL (all p-values <0.05). Increased severity of the Insomnia-Digestive Problems SC (p<0.05) and Nutritional Problems SC (p<0.05), at 3 months postoperatively were linked to reduced survival. This was the first study to follow SCs over time and to provide support of the adverse effects that increased severity of SCs may have on clinical outcomes in postoperative PC patients. The findings from this study may be used to provide anticipatory guidance and help inform SC assessments in PC patients. While causality cannot be determined between the SCs and clinical outcomes in this study, these potentially important associations deserve further investigation. Thus, this study provides a framework for future multidisciplinary investigation into the role of SCs in QoL and survival in this population.

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PREDICTORS AND TRAJECTORIES OF ATTENTIONAL FUNCTION CHANGES IN OUTPATIENTS RECEIVING CHEMOTHERAPY.

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"Chemo brain," otherwise known as chemotherapy-related cognitive impairment, is a frustrating side effect for patients and can greatly impact their quality of life. Some symptoms reported both during and following treatment include attentional function changes, such as decreased concentration and the decreased ability to formulate ideas. Little is known about variables that affect initial attentional function levels and its trajectory during active chemotherapy. The purpose of this study was to determine which demographic and clinical characteristics and symptoms affected initial levels of attentional function and its trajectory over the course of two treatment cycles. Using self-report questionnaires, data were collected from oncology outpatients who were recruited from two Comprehensive Cancer Centers, one Veteran's Affairs hospital, and four community-based oncology programs. Patients were undergoing treatment for breast, gastrointestinal, gynecological, or lung cancer (N = 1,329). The Attentional Function Index (AFI) was used to assess perceived effectiveness in completing daily tasks that required working memory and attention. Data were analyzed using hierarchical linear modeling (HLM) to evaluate potential predictors and trajectory of attentional function. Initial analysis of the data fit a piecewise model best and showed high inter-individual variability. Lower initial AFI scores were associated with being female and unemployed and having a poorer functional status. In addition, lower initial AFI scores were associated with higher levels of morning and evening fatigue, sleep disturbance, depressive symptoms, anxiety; and lower morning energy. Understanding the risk factors that are associated with lower attentional function can help clinicians, especially oncology nurses, to provide better education and symptom management at the outset of and throughout treatment. Oncology nurses in particular are uniquely positioned to help these patients understand the cognitive side effects of treatment through their daily or weekly contact with patients receiving chemotherapy.

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EARLY LESSONS FROM THE JEFFERSON PANCREAS TUMOR REGISTRY (JPTR).

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The Jefferson Pancreas Tumor Registry (JPTR) is a multidisciplinary, longitudinal study initiated in 2008. Persons diagnosed with pancreas cancer (PC) have concerns about future risk for family members. The purpose of the JPTR is: 1) to maintain a repository of information on hereditary conditions, family history of cancer, lifestyle risk factors, and environmental/ occupational risk factors for PC and related conditions, 2) in conjunction with the Jefferson Tissue Banking Study, to provide a link between gene alterations, family history and precision therapy, and 3) to identify high-risk non-affected family members for counseling and screening. All patients with PC or related conditions are eligible to participate in the JPTR. An annual survey aims to determine survival of members and identify new cancers or conditions in the registrant or other family members. 150 surveys were mailed in February 2015. Survey data have been examined using exploratory data analysis methods. Gene data were analyzed using standard sequencing techniques. There are currently 504 total registrants. Consistent with nationally reported statistics, cohort characteristics include: 65% sporadic PC, 14% familial PC, 7% other conditions and 14% controls. The survey response rate was 77%. 72% of the respondents were alive. Self-reported quality of life responses indicated that most people walked or exercised, persistent adverse symptoms included: GI issues, fatigue and weight loss. When asked if they would choose surgery, chemotherapy and radiation again, 88% answered in the affirmative. Participants rated ability to conduct activities of daily living as "very good" and overall quality of life as "good". Two candidate polymorphisms (IDO2 and WEE1 genes) were identified that may have implications for high-risk individuals/families. Early data from the JPTR indicate a remarkable response rate, as well as a high degree of satisfaction with treatment choices. Persistent unpleasant symptoms remain a problem for many of the survivors and are a focus of ongoing nursing support. The JPTR has identified a cohort of potentially high-risk non-affected persons who are candidates for nursing counseling and surveillance. Ongoing studies will determine the clinical and biochemical significance of the gene polymorphisms.

Underwriting: Funding from the Thomas Jefferson University Center for Pancreas, Biliary and Related Conditions and a grant from the National Institutes of Health

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THE ROLE OF ONCOLOGY ADVANCED PRACTICE PROVIDERS IN GENETIC CANCER RISK ASSESSMENT.

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Identification and management of patients with an inherited susceptibility to cancer is important in reducing cancer risk and promoting early cancer detection. Despite professional guidelines recommending genetic counseling, as well as improved patient knowledge and satisfaction among patients who receive genetic counseling, most patients who undergo BRCA testing do not receive this service. Physicians often lack the time for the intensive counseling required and genetic counselors are in short supply. Oncology APPs can fill this role, facilitating genetic cancer risk assessment to assist in identifying patients with hereditary cancer syndromes and improving patient care. We report on a successful GCRA model, which is APP-lead and genetic counselor supported which addresses the rising problem of genetic counseling needs within oncology. Patients meeting criteria for GCRA are identified by oncologists and other health care providers and are then referred to the APP. The APP holds two meetings with the patient and family. The first meeting consists of risk assessment and obtaining a three generation pedigree. This is followed by a discussion of testing options, possible test results and implications of results, risk to family members, insurance coverage, psychosocial implications, genetic discrimination, and confidentiality issues. The second meeting consists of results disclosure, creating a management plan, and implications for relatives. A successful model includes intensive initial training of APPs via learning modules, one-on-one education, and practicum. Ongoing education includes genetics courses, conferences, and monthly webinars. The APP model also benefits from monthly case conferences and consults with genetic counselors as needed. A historical chart review revealed that in 2012, 697 genetic risk evaluations were performed by APPs. This number increased to 1,487 in 2013 and 2,102 in 2014. In 2015, 2,235 genetic risk evaluations were performed by 22 APPs (17 advance practice nurses and 5 physician assistants). This ongoing project is fo-

cused on continuing to grow this service. The model described is an effective and expansive mechanism for delivery of high quality cancer genetics services. APPs are well positioned to provide genetic cancer risk assessment services for hereditary cancer syndromes to improve the health of patients and their families.

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PATIENT-REPORTED OUTCOME DATA FROM THE LUX-LUNG 8 PHASE III GLOBAL TRIAL OF AFATINIB VERSUS ERLOTINIB AS SECOND-LINE TREATMENT FOR ADVANCED SQUAMOUS CELL CARCINOMA OF THE LUNG FOLLOWING FIRST-LINE PLATINUM-BASED CHEMOTHERAPY.

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With more available agents for lung cancer treatment, practitioners need to make informed choices about which agents are most suitable for patients. An important part of this choice is discussing with patients evidenced-based data for each agent, including efficacy, safety, and impact on quality of life. The LUX-Lung 8 (LL8) phase III trial compared afatinib, an irreversible ErbB family blocker, with erlotinib as second-line treatment in patients with squamous cell carcinoma (SCC) of the lung. In this head-to-head trial, median progression-free survival and overall survival were significantly prolonged with afatinib versus erlotinib. Importantly, in order to capture treatment effects from a patient perspective, LL8 patient-reported outcome (PRO) data were collected and are presented here. The value these data provide for patient care will be explored from the perspective of a research nurse. PROs were assessed using the EORTC QLQ-C30/LC13 questionnaires. Proportion of patients with improvements in symptoms, time-to-deterioration (TTD), and changes over time were analyzed for prespecified lung cancer symptoms (cough, dyspnea, and pain) and global health status/quality of life (GHS/QoL). Rates of improved GHS/QoL (35.7% vs 28.3%; P = 0.041) and cough (43.4% vs 35.2%; P= 0.029) were significantly greater with afatinib than erlotinib. Rates of improved dyspnea and pain were 51.3% versus 44.1% and 40.2% versus 39.2% with afatinib and erlotinib, respectively. Afatinib significantly delayed TTD of dyspnea versus erlotinib (2.6 vs 1.9 months; P = 0.008), with a trend towards delayed TTD of cough with afatinib. TTD of pain was similar between treatments. Changes in mean scores over time significantly favored afatinib versus erlotinib for cough (P = 0.0091), dyspnea (P = 0.0024), and pain (P = 0.0384). Updated safety data will also be presented. PRO data can assist practitioners in the clinical setting by improving their understanding of disease and treatment effects on patients. In addition to efficacy and safety, PRO data should be considered when making treatment decisions as improvements in PROs may represent a measure of QoL. Afatinib improved key PRO parameters compared with erlotinib. These PRO analyses complement the significant survival improvements observed with second-line afatinib versus erlotinib in LL8.

Underwriting: Boehringer Ingelheim Pharmaceuticals, Inc.

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DISTRESS IN THE HOSPITALIZED CANCER PATIENT: A MULTIFACETED EXPERIENCE.

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Distress is defined by the National Comprehensive Cancer Network® (NCCN) as a multifactorial unpleasant emotional experience of a psychological, social and/or spiritual nature that may interfere with the ability to cope effectively with cancer, its physical symptoms and its treatment. Higher levels of distress in cancer patients correlate with decreased medical adherence, diminished quality of life and reduced survival. Few studies have examined distress in hospitalized cancer patients. The purpose of this study was to identify the level of distress experienced in hospitalized adult cancer patients, as well as contributing factors. Sociodemographic and health data were collected on 185 adult cancer patients hospitalized at a large Midwestern tertiary hospital during a 7 month period. Patients were asked to complete the NCCN 10-point Distress Thermometer® and problem checklist at one of three points in time. Associations between level of distress (DT score classified as 0-3, 4-6, and 7-10), overall problem scores and problem domain scores (Practical, Family, Emotional, Physical Problems, Spiritual/Religious Concerns) were evaluated using appropriate parametric and non-parametric tests depending on the nature and distribution of the variable. All three levels of distress were relatively equally represented (0-3 (38%), 4-6 (33%), 7-10 (29%). Patients hospitalized for complications reported higher levels of distress than those admitted for treatment (p= 0.01). Diagnoses were categorized into solid tumor and blood cancers. Associations between diagnosis and problem domain scores revealed that the physical problem domain scores were associated with solid tumors (p=0.048). Associations between type of cancer and distress scores were not significant (p=0.28). Sociodemographic variables associated with problem domain scores were: Practical Problems: Age (p=0.03), Timing of Survey Completion (p=0.01); Emotional Problems: Timing of Survey Completion (p=0.02); Spiritual/Religious Concerns: Gender (p=0.04); Physical Problems: Gender (p=0.04), Time Since Diagnosis (p=0.03), Reason for Hospitalization (p=<0.001), Timing of Survey Completion (p=0.03). Results offer a preliminary, yet rich, depiction of the many facets of distress in hospitalized adult cancer patients. Findings will serve as a template for focused distress assessment and further research identifying specific interventions for best practices.

Underwriting: Mayo Clinic Values Council

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A DYADIC INTERVENTION FOR DISTRESS MANAGEMENT FOR PATIENTS WITH MULTIPLE MYELOMA AND THEIR FAMILY CAREGIVERS: A PILOT STUDY.

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There are a growing number of cancer survivors living with multiple myeloma as a chronic illness due to advances in therapies and supportive care. However, these survivors are vulnerable for alterations in quality of life due to their typically advanced age, high symptom burden, and frequent courses of rigorous treatment. Both survivors and their family caregivers must master substantial self-management tasks related to the disease and treatment. Psychological distress, a common problem in both family caregivers and patients, impedes activation

for health management and can have a negative impact on the transition to living with chronic illness. The primary aim of this pilot study was to test a psychoeducational intervention, which employed a simple, low-impact walking activity, on emotional distress, activation for health management, fatigue, depression, and HRQOL in patients with multiple myeloma and their family caregivers. A secondary aim was to assess the feasibility and acceptability of the intervention. A two-group, prospective, randomized controlled design was used. The intervention was delivered jointly to the dyad by a nurse in one face-to-face session in the clinic within the first year after diagnosis. This was followed by 2 telephone booster calls. Caregivers and patients completed measures of anxiety, activation, fatigue, HRQOL, and depression at baseline, and at 6 and 12 weeks. The analysis consisted of descriptive statistics and linear mixed effects models. Alpha was set at .10 The sample consisted of 15 dyads of patients and caregivers, representing a 52% enrollment rate. Patients in the intervention group had statistically higher scores for activation ($p = .083$), global mental HRQOL ($p = .030$), and lower scores for depression ($p = .008$) than the control group. Caregivers in the intervention group had statistically lower scores for activation ($p = .077$) than the control group. Satisfaction with the intervention was high. The finding that the impact of the intervention was greater for patients than caregivers was perhaps due to the patients' focus on the walking activity as a means for physical recovery. The supportive aspects of the intervention for the caregiver need to be strengthened. Opportunities and challenges of dyadic interventions will be discussed.

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ANIMAL-FACILITATED THERAPY IMPROVES OUTCOMES FOR PATIENTS AND STAFF ON AN INPATIENT SURGICAL ONCOLOGY UNIT.

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Animal-facilitated therapy (AFT) is a complementary medicine intervention for the purpose of providing emotional support. Perceptions towards AFT are generally positive, however, it is not yet known if working on a unit with an AFT program impacts stress and job satisfaction. To our knowledge, no study has investigated the benefits of an AFT program on an inpatient unit. The purpose of this study was to assess the effects of an AFT program on patients and staff on a surgical oncology unit. A pre-post mixed methods design was used for this IRB-approved research study. Baseline and post-intervention assessments were conducted (for staff – after the program had been active on the unit for 6 weeks, for patients – at discharge). The intervention was having the AFT program fully integrated on a surgical inpatient unit 4 days a week. 41 staff and 50 patients were enrolled in the intervention. 50 control patients did not receive AFT. Differences between baseline and follow-up were evaluated with a paired t-test and a descriptive qualitative analysis. QOL indicators improved for both intervention and control patients, with only level of energy significantly improved in the intervention group ($p=0.008$). For staff, compassion satisfaction was high and burnout was low (NS from pre to post intervention). Qualitative responses were overwhelmingly positive for patients and staff. Patients responded that AFT "gave me something to look forward to" and helped them recover from surgery ("I was so weak but seeing the dog made me feel stronger"). Staff responded that AFT was a welcome distraction ("Seeing the dogs puts a smile on everyone's face, no matter the day they are having"). Additional qualitative analysis will be presented. AFT promotes a healing environment for patients and staff. Participants were overwhelmingly positive about their experience with AFT. An incidental finding was the anecdotal benefit to family and friends visiting. Future research should explore benefits of AFT with patients and staff in other oncology settings. AFT is a holistic and complementary therapy that has the potential to improve the patient experience during oncology treatment.

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EDUCATING METASTATIC BREAST CANCER PATIENTS THROUGH VISUAL COMMUNICATION AIDS: THE DANDELION PROJECT.

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Metastatic breast cancer (MBC) is different from earlier stage breast cancer—it cannot be cured and its trajectory is complicated. MBC patients have, on average, 3 years' life expectancy and are on lifelong treatment. Patients have few days to choose treatment after an unexpected diagnosis. Sadly, most of these conversations with healthcare professionals (HCPs) are oral, a communication method with low recall accuracy of 14% in non life-threatening situations. Use an everyday metaphor in a visual communication aid ("the toolkit") to help nurses and other HCPs better communicate with newly diagnosed MBC patients, with a range of literacy levels, about their diagnosis, treatment options, quality of life and related considerations. A patient and HCP centered approach was used following the "U.S.E.R. Design Thinking Framework"; >80 patients and HCPs helped develop and test a visual communication toolkit prototype; the researcher experienced and mapped communication pathways in 6 scenarios; 53 patients informed design iterations of the toolkit; a survey (n=500) measured baseline patient communication experiences prior to starting MBC treatments to identify gaps. One-third of patients surveyed felt they didn't have enough knowledge to participate in decision making. Patients tend to overestimate their knowledge, with just 46% including both HER2 and hormone status when asked to describe their type. Only 13% of patients surveyed (n=487) had visuals during initial discussions with their HCPs. A dandelion metaphor was visualized to explain metastasis and treatment options as the basis of the toolkit. The prototype comprises 4 sheets for oncologists to convey pathology and treatment options, and a set of customized cards for use by nurses. Patient and HCP feedback during prototype development showed high levels of engagement with the metaphor. A visual approach to improving communication between patients and HCPs is possible based on positive results of patient observations and practitioner feedback on the prototype. The toolkit (piloted in the U.S. and internationally in 2016), is expected to address issues of low-literacy, fear and taboo surrounding discussion of MBC and improve understanding of the disease and its treatments.

Underwriting: Metastatic Breast Cancer Alliance

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DEVELOPING THE FIRST GLOBAL BREAST CANCER EDUCATION CAMPAIGN: FINDINGS ON PATIENT KNOWLEDGE AND EFFECTIVE COMMUNICATION DESIGN.

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Each year, breast cancer kills more than 500,000 women worldwide. In resource-poor settings, most are diagnosed at an

advanced stage, with survival rates ranging from 10-40%. This contrasts sharply in settings where early detection and basic treatment are available and accessible, with survival rates for early stage breast cancer above 80% (ibid). This poster explores a method for improving these outcomes in both settings by sharing the success of the first global breast cancer awareness campaign and educational materials to help patients identify symptoms earlier—despite barriers of low literacy, disinterest, taboo and fear. Innovations: 1) Help a diverse global population understand the symptoms of breast cancer through the use of a familiar metaphor. 2) Overcome literacy issues by teaching through visuals rather than text descriptions. 3) Use friendly imagery to engage audiences and avoid censorship issues associated with breasts. A "U.S.E.R. Design Thinking Model Framework" was used to develop the materials for a multilingual audience. User testing and surveys identified communication accuracy as the visuals were tested prior to deployment. Survey (n=255) revealed that 51% of patients didn't know what a cancerous lump felt like. Patient testing (n=36) with the materials showed the visuals increased accurate tactile knowledge (86%) compared to a traditional illustration (15%) and reported patient confidence in recognizing signs of breast cancer was high (89%). Further testing (n=67) revealed that people could accurately identify most of the visual symptoms without a text label. Results show that visual metaphors likely have a strong impact on informing the public about breast cancer symptoms more effectively than traditional text-based methods. A more accurate tactile knowledge and understanding of visual signs of breast cancer could lead to decreased mortality rates worldwide by improving early reporting of symptoms. Since 2014, the campaign has been distributed in 8 languages, by nearly 1,000 organizations and individual partners, including the Turkish Government, the Samoan Cancer Society and Run for the Cure Japan (81 countries) showing an eagerness to use visual methods for educating a diverse audience.

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DOES CHLORHEXADINE BATHING REDUCE THE RATE OF INFECTIONS FOR TRANSPLANT-ONCOLOGY PATIENTS?

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National Patient Safety Goals published by the Joint Commission (NPSG.07.03.01) included using proven guidelines to prevent infection. Despite contact precautions and hand hygiene, hospital acquired infections still occur. Chlorhexidine gluconate (CHG) is an antimicrobial agent that is bactericidal to gram positive bacteria and some viruses. Daily bathing with CHG wipes has been shown to reduce the risk of developing a multi-drug resistant infection such as Methicillin-resistant Staphylococcus aureus or Vancomycin-Resistant Enterococci. In addition, Rupp (2012) found a significant decrease in infections due to Clostridium difficile when using CHG daily baths in the ICU. Due to immunosuppression, oncology and stem cell transplant patients are especially vulnerable to hospital acquired infections. The purpose of this nurse driven evidence based practice project was to determine whether the use of CHG wipes for bathing would reduce infection rates for oncology and stem cell transplant patients. The intervention was the use of CHG wipes daily for bathing. The population was inpatients on a twelve bed transplant oncology unit with exclusion criteria identified. Registered nurses and patient care technicians were trained on the procedures for bathing with CHG wipes. Patients received verbal and written information upon admission regarding the importance of reducing infections and the benefits of CHG bathing. Compliance with daily use of CHG wipes was monitored with chart audits. Staff education on the proper use of CHG wipes was reinforced through simulation lab experiences and written information. Data for the 12 months prior to implementation was 11 hospital acquired infections (2.99 per 1000 patient days). Post implementation infections were seven for those using CHG wipes (1.93 per 1000 patient days). Patients who had not used CHG wipes within 48 hours prior to the positive culture sample were excluded. Hospital acquired infections for those that were excluded was 12 (3.3 per 1000 patient days). These findings demonstrate that using CHG wipes as a bathing method reduced hospital acquired infections in this transplant-oncology patient population. Based on positive project results, the use of CHG bathing wipes will continue to be used with this patient population.

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UTILIZING A PROTOCOL ACUITY TOOL IN CONJUNCTION WITH A HOME-GROWN INSTITUTIONAL TASK TRACKER TO DETERMINE CLINICAL RESEARCH STAFFING NEEDS AND REAL-TIME WORKLOADS AT CITY OF HOPE (COH) COMPREHENSIVE CANCER CENTER'S CLINICAL TRIALS OFFICE (CTO).

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The complexity of cancer clinical trials has increased significantly since 1999. Effective tools to quantify workloads and justify research staff in the midst of rising health care costs and staff salaries are paramount. Over the past decade, mandated procedures per protocol and regulatory and reporting requirements haves doubled and the median number of required case report forms has also increased from an average of 55 to 180 pages. We will report on our experience utilizing a Protocol Acuity Tool (adapted from the Wichita Protocol Acuity Tool) combined with data from our Imedris Task Tracker in determining clinical research coordinator (CRC) and clinical research nurse (CRN) staffing needs in a rapidly growing oncology CTO. Approximately 335 treatment trials with active patients were scored. Scores ranged from 1 to 11 points [maximum 10 for adult trials, 11 for pediatric trials] depending on the complexity of the trial, with extra points allotted for industry sponsored. For example, simple trials with single oral agent are scored 2 points, whereas a protocol involving "first in human" therapeutics could receive a score as high as 10. Protocol management activity was scored and analyzed separately and dependent on study phase and sponsor source. The tool provided information to analyze individual staff scores (protocol score x patients enrolled) and overall acuity scores for specific Disease Teams. A total acuity score of 150 per individual represented a maximum workload for an experienced CRC/CRN whereas a score of 100 correlated with a novice CRC/CRN. Although a score of 150 for an experienced CRC/CRN is determined to be a full workload, this score did not account for staff mentoring, complex patients or other hidden protocol activities. However, protocol points may be adjusted for further accuracy after a protocol is activated and enrolling. This tool proved to be a valuable predictor for measuring staff workloads and determining the need for additional staff. This project continues to be a work in progress. Time and use of this tool will reveal its full efficacy and its value for use in other areas in our cancer program.

PODIUM ABSTRACTS

SUPPORTING PATIENTS WITH A DIAGNOSIS OF RECURRENT HEAD AND NECK CANCER: PATIENT-CENTERED INFORMATION FOR ONCOLOGY NURSE CLINICIANS.

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Despite aggressive treatment for primary disease, the incidence of recurrent head and neck cancer (rHNC) may be as high as 30–50% in patients treated with curative intent. Five-year survival rates after treatment for rHNC range from 11-39%, and morbidity after treatment can be quite high, particularly due to significant disfigurement and physical dysfunction. Patients must decide what, if any, type of additional treatment they desire, and oncology nurse clinicians are often part of this decision making process. The purpose of this study was to identify pertinent information for oncology nurse clinicians by examining patient priorities during treatment decision-making for rHNC. This qualitative study was nested within a mixed-methods longitudinal study of patients with rHNC. Individuals age 21 years or older with newly diagnosed rHNC were recruited from a medical oncology clinic to participate in a one-on-one semi-structured interview. During the interviews, participants were asked about their decision making process as they decided to pursue or not pursue treatment for their rHNC. Interviews were audio recorded and transcribed verbatim. Transcripts were then analyzed by two independent reviewers. Thematic categories were confirmed following triangulation of findings. A third reviewer analyzed the transcripts using the themes generated by the first two reviewers. Descriptive statistics were used to describe the sample population. Ages of participants (n=26) ranged from 41 to 81 years with an average of 63 years. Participants were mostly male (n=19, 69.2%), Caucasian (n=22, 84.6%), and married (n=15, 57.7%). Two themes emerged from the interviews. The first theme was motivation for pursing treatment. Subthemes included family and symptom burden. The second theme was "it's not over until it's over." Subthemes included hope and "whatever happens, happens." This is the first known study to interview individuals with newly diagnosed rHNC about their decision making process. These interviews indicate that the individual motivation for pursing treatment and a sense of "it's not over until it's over" are central in patients' decision-making process. Oncology nurse clinicians can provide better patient-centered care by recognizing these areas as important to patients and including consideration for these issues in their patient education and supportive care efforts.

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PREDICTORS AND TRAJECTORIES OF SLEEP DISTURBANCE IN ONCOLOGY OUTPATIENTS DURING CHEMOTHERAPY.

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Sleep disturbance in oncology patients is estimated to be two to three times that of the general population and has a significant impact on quality of life. However, predictors of sleep disturbance during chemotherapy (CTX) have not been identified in previous research. Therefore, the purposes of the current study, in a sample of outpatients with breast, gastrointestinal (GI), GYN, and lung cancer who received two cycles of CTX were to evaluate for variations in the severity of sleep disturbance and to determine which demographic, clinical, and symptom characteristics were associated with initial levels and the trajectories of sleep disturbance. Patients recruited from two Comprehensive Cancer Centers, one Veteran's Affairs hospital, and four community-based oncology programs completed study questionnaires in their homes, a total of six times over two cycles of CTX. The 21 item General Sleep Disturbance Scale (GSDS), that assesses the quality of sleep in the past week, was used to evaluate sleep disturbance at each time point. Descriptive statistics and frequency distributions were generated on the sample characteristics and symptom severity scores at enrollment. Hierarchical linear modeling (HLM) was used to examine intra-individual variability in sleep disturbance and to evaluate predictors associated with initial levels and the changes in sleep disturbance over time. Patients with higher BMI, trait anxiety, depressive symptoms, and morning and evening fatigue, as well as lower functional status and poorer attentional function had higher initial levels of sleep disturbance. Higher levels of sleep disturbance over time were associated with a higher level of education, as well as higher levels of morning fatigue, sleep disturbance score, and lower attentional function. This study is the first to identify modifiable and non-modifiable factors associated with sleep disturbance in patients receiving chemotherapy. Oncology nurses can use these characteristics to identify patients at higher risk of sleep disturbance. By performing more detailed assessments, oncology nurses can provide patients with specific interventions to improve sleep during and after treatment.

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VALIDATION OF THE FERGY NAUSEA ASSESSMENT TOOL© (F-NAT).

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Nausea is a common symptom presented in oncology patients which can have a profound impact on quality of life, nutrition, therapeutic response, and compliance of treatment. However, no existing easily administered nausea assessment tools validated for adults specifically for the acute care setting were found in the literature. Therefore, the Fergy Nausea Assessment Tool© (F-NAT) was systematically developed with input from 20 oncology staff nurses. The purpose of this study was to assess the convergent and discriminant validity of the newly developed nausea assessment tool (F-NAT) designed for use with adult oncology patients. Instruments: The F-NAT consists of five sketched, gender and racial neutral, faces depicting the following 5 concomitant phrases: 'No Nausea', 'Feeling nauseated but able to eat and take oral medications', 'Feeling very nauseated, not able to eat or take oral medications', 'Feeling like I'm just about to vomit', and 'Constant vomiting'. The F-NAT is scored from 0 (No Nausea) to 4 (Constant Vomiting). Nausea was also assessed on a 10-point visual analog scale and pain was assessed on a 10-point pain scale. Adult oncology in-patients in an urban hospital (N=100) were asked to rate their nausea on the F-NAT and on the visual analog nausea scale (scored 0 to 10) to assess convergent validity. Discriminant validity was assessed by having participants rate their pain on a visual analog scale (scored 0 to 10). Data were analyzed descriptively and Pearson's correlation coefficients (r) were calculated. Participants were primarily over the age of 41 (92%), female (62%), and Caucasian (83%). F-Nat scores ranged from 0 (8%) to 4 (19%) (M=2.2, SD=1.2). The F-NAT was

strongly correlated with the visual analog nausea scale (r=.821, p<.001) and only weakly correlated with the pain scale (r=.312, p=.002). The F-NAT is a simple to use nausea assessment tool with visual and text prompts to determine nausea level. This study confirmed the convergent and discriminant validity of the F-NAT with oncology patients. Future research will assess the usefulness and usability of the F-NAT in determining the efficacy of anti-emetic therapy in oncology in-patients.

Underwriting: J Patrick Barnes Grant

MOBILE TECHNOLOGY FOR CANCER CARE COORDINATION: EXPLORING USABILITY AND ACCEPTANCE.

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The Institute of Medicine (IOM) identified that the cancer care delivery system in the United States lacks coordinated, patient-centered care. This is further challenged in rural areas, where 25% of the population lives. Mobile technology may improve access to patient-centered care coordination and symptom management for rural cancer patients. The "Personal Health Network" (PHN), a mobile health technology designed to enhance nurse-directed coordination of early and ongoing cancer care, was developed to address this gap. This mixed method pilot study explored the usability and acceptance of the PHN technology to support rural adults with cancer. English-speaking rural adults who were undergoing chemotherapy were recruited by flyer at a community cancer center. Participants (n=10) watched a video demonstration of key features of the PHN during a semi-structured interview to explore patient-centered features and perceived acceptance. A survey including a demographic and technology use profile, the Health Technology Acceptance and Use (HTAU) scale (0-6) and Computer Self Efficacy scale (CSES) (1-10) was also administered to assess the potential to adopt the technology. Qualitative data were analyzed using a thematic approach. Survey data were analyzed utilizing descriptive statistics. The scores on both HTAU (M=4.52, SD=1.73) and CSES (M=7.96, SD=2.54) indicated a moderately high level of potential acceptance of the technology. Interview analysis revealed attitudes generally favorable regarding care coordination, communication, and symptom management from a distance. Even participants who did not prefer to use technology stated they would use the PHN to save travel and time. However, a theme emerged of concern regarding personal privacy and control of health information, which could influence acceptance and use. Additionally, participants expressed a desire for additional functionality that would provide emotional support from others who were going through the same thing. Future revisions of the PHN technology should consider additional patient support in the form of support groups and 24-hour chat, and participants' desire for control of information and privacy. This pilot study demonstrated that the PHN has patient-centered features and functions that support the use of the technology as a cancer care intervention for rural residents.

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THE EFFECTS OF CHEMOTHERAPY ON THE HUMORAL IMMUNE SYSTEM IN SURVIVORS OF PEDIATRIC HEMATOLOGICAL MALIGNANCIES: AN INTEGRATIVE REVIEW.

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Leukemias and lymphomas account for over half of new cancer cases in children each year. Due to advancements in chemotherapy over the past three decades, survival rates for hematological malignancies in children now approximate 80%. Short term effects of chemotherapy are well documented and include depletion of protective antibodies to infectious diseases. Long term effects of chemotherapy on the humoral immune system remain unclear. Recently there has been a shift away from childhood vaccination resulting in outbreaks of infectious disease and a decrease in population immunity. Thus, survivors of pediatric hematologic malignancies may be at increased risk from communicable diseases and serve as an additional reservoir for spread of disease. The state of scientific knowledge regarding humoral immunity in this population is insufficient for concrete conclusions. An integrated review of the literature (IRL) was conducted to evaluate vaccination data in survivors of childhood hematological malignancies in order to identify clinical implications and avenues for further study. Both PubMed and Ovid databases were searched for studies that met the following inclusion criteria: Studies conducted in the US or Western Europe within the past 30 years that examined titer levels following treatment and again after revaccination in survivors of hematologic malignancies aged 1 to 18 years. Of the 54 studies reviewed, 9 met inclusion criteria. Quality was evaluated against specific methodological standards. In studies that met inclusion criteria an average of 70% of participants lost immunity to at least one inoculation following treatment. A majority of participants recovered immunity after revaccination, with a small percentage unable to regain antibodies. There is little consistency between studies regarding the rates at which immunity is lost, furthermore, there are no particulars on how long immunity persists following revaccination. Findings of this IRL will provide the foundation for further research aimed at closing the gap in the care of childhood cancer survivors. Clinical ramifications of losing protection against these diseases are serious as vaccination represents an instrumental public health initiative for reducing morbidity and mortality globally. Thus, implications for practice span the individual, family, and global communities.

SYMPTOM SELF-MANAGEMENT STRATEGIES REPORTED BY ADOLESCENTS AND YOUNG ADULTS WITH CANCER.

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Self-management for adolescents and young adults (AYAs) with cancer includes managing multiple symptoms. We present symptom self-management strategies reported by AYAs using the Computerized Symptom Capture Tool (C-SCAT). The C-SCAT is a heuristics-based, mobile technology application that guides users to create a graphical image of their symptoms, symptom clusters, relationships between symptoms, and priority symptoms within symptom clusters. Users also answer questions addressing perceived causes, alleviating/exacerbating factors, and self-management strategies. Seventy-two AYAs (median 18 years; range 13-29) receiving myelosup-

pressive chemotherapy completed the C-SCAT. Nausea, lack of appetite, lack of energy, pain, and feeling drowsy were the top five priority symptoms. Responses to, "What do you think helps make it better?" were analyzed using qualitative content analysis with individual responses serving as the unit of analysis; 169 responses were organized into 46 codes addressing self-management strategies. Self-management strategies included both independent (implemented without clinician involvement) or shared (requiring involvement) approaches. Independent strategies were more frequently reported for lack of energy, lack of appetite, and feeling drowsy. The most frequent codes for managing lack of energy were: sleep (n=9), rest (n=8), and physical activity (n=6). The most frequent codes for managing lack of appetite were: eating what/when I want (n=7), nothing (n=4), and medication-antiemetic (n=4). The most frequent codes for managing feeling drowsy were: sleep (n=11), rest (n=6), changing medication dose (n=3), substance use-caffeine (n=3), and nothing (n=3). Shared strategies were more frequently reported for nausea and pain management and emphasized using prescribed medications. The most frequent codes for managing nausea were: medication-antiemetic (n=21) and medication-not specified (n=15), and eating what/when I want (n=3). The most frequent codes for managing pain were: medication-analgesic (n=14), medication-not specified (n=8), and medication-chemotherapy (n=2). AYAs with cancer used multiple independent and shared symptom self-management strategies. Several, however, indicated that "nothing" made their symptoms better. The C-SCAT is an innovative tool to enhance understanding of strategies that AYAs use and their perceived effectiveness. Future research should explore factors that influence AYAs' self-management behaviors, such as health literacy, self-efficacy, and self-regulation. Interventions to promote effective independent and shared self-management efforts are needed to achieve optimal health outcomes.

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