

# Podium Abstracts

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## ADVANCED PRACTICE

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### 01 EMBEDDING AN ADVANCED PRACTICE NURSE RUN GENETICS PROGRAM IN A VETERAN ONCOLOGY CLINIC IMPROVES GENETIC TESTING RATES OF VETERANS WITH CANCER

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While there are increasing numbers of oncology patients for whom genetic testing is recommended by the National Cancer Care Network (NCCN), there is a critical shortage of genetics services providers in the United States, and in the Department of Veterans Affairs. We hypothesized that nurses could augment the genetic workforce within VA by addressing the genetic testing and genetic care needs of cancer genetics referrals by being embedded within the Oncology clinic. We initiated the Nursing Genetics Fellowship in the Oncology practice at the Corporal Michael Crescenz VA Medical Center (CMCVAMC) in October 2020. In the one year prior to the initiation of the VA-PCF Nursing Genetics Fellowship (10/1/2019-9/30/2020), 61 unaffected patients with a family history of cancer (5.1 per month) and 85 oncology patients (7.1 per month) were referred to a centralized telehealth-based Genomic Medicine Service (GMS) from CMCVAMC. Genetic testing was completed in nine (15%, <1 per month) of unaffected patients

and 21 (25%, 1.7 per month) of oncology patients. In the eight months after initiation of the fellowship (10/1/2020 - 5/30/2021), 39 unaffected patients with a family history of cancer (4.9 per month) and 90 oncology patients (11.3 per month) were referred to the Oncology Genetics consult; 44 of these were referred to GMS and navigated by the Nurse Fellow. Genetic testing was completed in three (8%, <1 per month) of unaffected patients and 30 (32%, 3.8 per month) of oncology patients. Comparing pre and post initiation of Nurse Genetics Fellow program, there was a 57% increase in the number of oncology patients referred (7 to 11 per month). The number of patients who underwent genetic testing improved from 1.7 to 3.8 oncology patients per month, a 120% increase. However, the proportion of oncology patients that underwent genetic testing remained similar (25% to 32%). The rate of identifying a pathogenic or likely pathogenic mutation or variant of uncertain significance (VUS) was similar pre and post initiation of the program. Expansion of the Nursing Genetics fellowship program will likely improve access to genetics services by increasing genetic testing volume in oncology patients across VAMC. Improvements are still required aimed at increasing the genetic testing uptake rate within Veterans with cancer.

### 02 HIGH RISK BREAST CANCER CLINIC

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This clinic helps to formulate individualized plans for those at high risk for developing a breast cancer to prevent and/or reduce this risk. Our primary goal is to identify the high risk population, educate them and set up additional screening for early detection. At Ochsner, there was a change in the high-risk breast provider population, requiring a high-risk breast clinic to be formed, which is run by the Medical Oncology Advanced Practice Providers (APPs). The clinic is set up to have patients referred after receiving an automated Tyrer Cuzick (TC) score >20% on their mammogram. The referrals to clinic largely come from the provider ordering the mammogram. The APPs will see this patient population and recalculate the TC score to ensure the patient is appropriate for the high-risk breast clinic. A Gail model score is also calculated to establish whether they qualify for chemoprevention. Once an elevated TC score of > 20% or a Gail model of >1.7% is documented, the APP educates on high-risk breast cancer. The APP discusses breast cancer

risk factors (modifiable and non-modifiable), chemoprevention, lifestyle modifications and screening. This clinic has been in place for 12 months. Those patients who develop a breast cancer are referred to surgical, medical, and/or radiation oncologist. The transition of the high-risk breast clinic from the surgical oncologist to medical oncology APPs has been successful. The surgical oncologists' schedules have opened to accommodate new diagnosis of breast cancer. The APPs have been successful at creating a new Ochsner Health specific protocol, which follows the NCCN guidelines, for patients at an increased risk for breast cancer, this ensures all patients with a TC score > 20% and/or a Gail model of >1.7% are offered the same standard of care. The APP run high risk breast clinic has been successful in early detection of breast cancer. It has decreased new patient wait times and reduced a redundant visit for those diagnosed with atypical ductal hyperplasia (ADH). Plans include high-risk breast clinics at Ochsner satellite clinics. Post- COVID plans include having a high-risk breast educational session for patients and family members. As volume increases, a full-time high-risk breast APP specialist may be indicated for the clinic.

### 03 TOOLS FOR PROMOTING SAFETY WITH CHEMOTHERAPY ADMINISTRATION ON A NEW MEDICAL ONCOLOGY UNIT

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After completion of a new bed tower, our surgical oncology patients were relocated, creating two stand-alone units: one for medical oncology and one for surgical oncology. Most senior nursing staff chose to move with surgical oncology, which left a majority of nurses who have never administered chemotherapy. The Clinical Nurse Specialist (CNS) identified the need to provide the new staff with tools designed to promote safety when administering chemotherapy. The purpose of this project was to develop chemotherapy tools to promote safe chemotherapy administration, specifically designed for use by nurses new to oncology and chemotherapy. Using a unit-based eight-hour didactic program "Oncology Bootcamp" focused on chemotherapy and chemotherapy-related complications as the foundational component, additional fundamental tools were identified. The course was followed by each nurse spending 1 week in the ambulatory infusion center for "hands-on" chemotherapy experience. Other tools developed were a chemotherapy checklist, a binder with chemothera-

py "quick facts", regimen-specific power points, and sample chemotherapy documentation. As the chemotherapy education and onboarding is still in process, post-course evaluations will be administered. The Qualtrics survey will determine which tools were being used and most helpful in their daily practice. Thus far, 10 nurses have completed the education intervention. Anecdotally, they have reported the course to meet their needs and improved their practice for chemotherapy safety and symptom management. This is a simple but useful way to see which tools are most helpful for new nurses learning chemotherapy. As the complexity of new chemotherapy regimens are seen on the inpatient unit, it is essential to have tools that are helpful and staff will use to assist them. This project can easily be replicated in any community or academic setting.

### 04 LEVERAGING TECHNOLOGY IN ENHANCING NURSES' COMFORT AND CAPABILITY WITH END-OF-LIFE CARE

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Nearly one-third of patients with cancer in the United States die in a hospital. Nurses who care for the dying are obliged to provide quality end-of-life (EOL) care that addresses relief of pain and other symptoms. Many nurses express a lack of comfort and capability caring for patients who are dying. Having little EOL education, experience, and support can contribute to these sentiments. Nurses less experienced can be guided by the structure inherent within an order set designed to promote patient comfort. This project aimed to evaluate an electronic order set, including evidence-based medications and structured symptom assessments, on nurses' self-perceived capability and comfort with EOL care. An education module accompanied the intervention. A new EOL order set was built by a multidisciplinary group from the supportive care service and information systems department to support a newly developed EOL nursing standard of care. It was designed for patients who have chosen comfort as their primary goal of care and are remaining in the hospital to die. Prior to implementation an electronic module was developed to educate nurses about EOL care and the order set. Prompts within the order set guide the nurse to perform regular assessments for common symptoms at EOL and outline interventions to address them. A descriptive design was used to evaluate nurse demographic information

and perceptions about EOL care capability and comfort. Data was captured with an anonymous survey. A published survey, used with permission, was sent to nurses two months after order set implementation. An independent two group t-test was used to compare aggregate survey results of those who and did not interface with the order set. There was a statistically significant difference in the comfort and capability scores of those nurses who interfaced with the EOL order set verses those that did not. The educational module alone was not independently associated with greater survey scores. The use of a structured order set providing appropriate medications and focused nursing assessments provided guidance to the nurse in addressing symptoms at EOL. This in turn enhanced their comfort and capability with EOL care. The use of technology, interfaced with the best evidence and education, guided nursing practice resulting in an innovation that impacts quality care.

## **05 REFLECTIONS ON TWENTY YEARS AS AN ONCOLOGY NURSE ENTREPRENEUR: LESSONS LEARNED TO HELP OTHERS IN THIS UNIQUE NURSING ROLE**

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Oncology nurses have numerous career options including the unique role as an oncology nurse entrepreneur. Nurse entrepreneurs leverage their healthcare background along with creativity, business knowledge, and collaborative relationships to improve patient care. As a clinical nurse specialist who transitioned to an oncology nurse entrepreneur almost 20 years ago, part of my current role is mentoring oncology nurses who dream of becoming an oncology nurse entrepreneur. The purpose of this presentation is to help oncology nurses who are interested in a career as a nurse entrepreneur to help them identify the skills and qualities they need to be successful in this role. For those already practicing as an oncology nurse entrepreneur, they will gain insight into how to strengthen or expand their role. Content will review self-reflection questions that entrepreneurial nurse candidates should examine before considering in this role and then revisit at various career points. Case studies will explore entrepreneurial nurse footsteps and their impact on cancer care, including nurse run businesses like my own company, beyond Oncology. Subject matter will include how to start, network, plan, build, navigate challenges, and evaluate success in order to remain

in business. As nurse coach, Janessa Rauch, says, “Find someone who has walked the path you want to take and share with them your dreams and passions.” As one of the first oncology nurse entrepreneurs, it is my privilege to now mentor two oncology nurses practicing in very different areas who clearly have the passion, drive, and desire to become oncology nurse entrepreneurs. Each nurse has their own strengths and improvement opportunities, but both are creating a long-term plan to transition to this role. We continually evaluate their progress toward their goals. The work of oncology nurse entrepreneurs has the potential to make a profound impact on cancer care. Through their independent and collaborative creative, innovative approaches, they can help to transform healthcare to improve patient outcomes. My goal is to share my experience and those of various role models in the hopes of encouraging and supporting other oncology nurses interested in this unique oncology nursing role.

## **06 PATIENT AND INTIMATE PARTNER (IP) ILLNESS APPRAISALS IN CANCER: A MULTI-METHODS STUDY**

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Psychological distress for patients with serious illness has been associated with increased physical and spiritual distress, decreased quality of life, and increased medical expenses at end of life (EOL). For both cancer patients and their intimate partners (IPs), appraising the illness and communicating about it can be challenging. Yet, there is little evidence on how best to support them. Bodenmann’s Systemic-Transactional Model (STM) of dyadic coping provided foundation to study how living with cancer impacts communication at primary appraisal level in patient/IP dyad. The purpose of this exploratory multi-methods study was to understand patient/IP illness appraisals. This was investigated through following aims: 1. Describe patient/IP perceptions of dyadic communication before and after diagnosis of advanced cancer (including barriers and facilitators to sharing emotionally vulnerable content); 2. Describe patterns (incongruent/congruent) of patient and IP communication during advanced cancer; and 3. Explore relationships between experiential suffering (Suffering Pictogram) and communication congruency (CCAT-PF measure). Descriptive phenomenology was used for the qualitative phase. In-depth, semi-structured interviews with dyads

were done, followed by individual interviews. The quantitative phase assessed cancer communication and suffering using established measures. Main findings of qualitative analyses include: 1) Vulnerable communication is complicated by balancing two opposing worlds: Hope/Positivity and Uncertainty/Fear of Death; and 2) Vulnerable communication about EOL and hospice is emotional and unfamiliar. Hearing the word 'hospice' ends uncertainty, confirming death from cancer is definite. Patients and IPs felt unprepared and needed guidance about skills to cross this vulnerable environment toward open communication. Quantitative data from communication measures showed low to medium discrepancy between dyads yet, patients displayed more discrepant communication behavior than IP counterparts. IPs consistently exhibited higher suffering scores than patients across Overall Suffering and in 6/8 suffering domains. Worry and Fear were identified as highest domains of suffering for both patients/IPs. For IP dyads to articulate preferences for care with providers they must first be provided external support to facilitate vulnerable conversations within the dyad itself. These dyadic conversations must be initiated early after diagnosis to strengthen available supports during illness and EOL. Study was innovative in its focus on patient and IP dyads early after diagnosis of advanced cancer. Additionally, this study was innovative in its use of dyadic theory as its foundation.

## **07 ADVANCING ONCOLOGY NURSING PRACTICE THROUGH WRITING A MANUSCRIPT**

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Oncology care is integrally aligned with scientific innovations which in turn drives advances in nursing clinical practice. Nurses promote the dissemination of knowledge and inquiry in patient care. The *Clinical Journal of Oncology Nursing* (CJON, a peer reviewed journal) translates change in professional nursing practice via manuscripts and reaches nurses around the world. Often publication is not viewed as something to be done by oncology nurses so limiting the broad sharing of knowledge and advances in practice. At a large NCI-designated ambulatory oncology center an opportunity for authoring a manuscript was identified as a mentored nurse led goal. The purpose of this project was to describe the process of writing a manuscript for publication to promote dissemination of new findings and knowledge supporting excellence in

oncology nurse practice. Two oncology nurse leaders in their graduate field work course opted to author a manuscript on organizational adoption of theoretical nursing model. A committee had worked for 2 years to design a relevant nursing practice model. All 7 committee members were included in the decision to publish. CJON Author guidelines were downloaded, multiple drafts were written, mentored feedback from a nurse scientist was integrated, and the manuscript was submitted. This process took about 3 months. The manuscript was accepted and guidance by journal editors on refinement of ideas and desired publication format was provided. Designing and integrating a theoretical nursing model was an organizational commitment and gave clarity to implications for practice. The model foundationally linked nursing theory to current oncology practices. Two nurses led team authorship to disseminate these findings broadly to oncology nurses and built personal competence and confidence with publication. Oncology nurses are specialized experts for whom manuscript writing should be seen as a means of improving patient outcomes and professionally attainable. The timely dissemination of knowledge and new clinical findings in a written manuscript is an achievable endeavor for the novice writer and time should be committed on the part of cancer center leadership to facilitate this skill for the promotion of best clinical practice and quality patient outcomes.

## **08 EVALUATION OF A MENTORSHIP PILOT PROGRAM WITHIN AN ESTABLISHED ONCOLOGY FELLOWSHIP FOR ADVANCED-PRACTICE PROVIDERS**

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The role of the nurse practitioner is expanding apace with the increasing complexity of the healthcare system. Nurse practitioners have challenging role expectations and many novice NPs report feeling underprepared for the complexity of the patients they serve. The purpose of this project was to conduct an evaluation of a newly implemented mentorship pilot program within an established advanced practice oncology fellowship at a comprehensive cancer center. Objectives included examining: 1) role transition, 2) intent to remain within the organization, 3) mentorship effectiveness, and 4) perceptions of the pilot program. A mentorship pilot program was implemented into an existing APP oncology fellowship cohort comprised of 15 novice NPs. A mentor was assigned to each fellow for the duration



of the year-long program. The Nurse Practitioner Role Transition Scale (NPRTS) and Intent to Stay survey were distributed to the mentees at the beginning, middle, and end of the mentorship pilot program. Additionally, the Mentorship Effectiveness Scale (MES) and an optional free-response survey were distributed to the mentees at the end of the program. Quantitative and qualitative data were collected and then evaluated using univariate statistics and thematic analyses. The results of the NPRTS indicate that although the mentees generally experienced improving scores on the items included in the transition scale, there was one item on the scale that demonstrated worsening scores at each subsequent data collection point: the mentees felt a growing lack of support. The results of this tool therefore indicate that there is a need for additional intervention so that novice NPs can feel supported during their first year of practice. The mentors in the pilot program were highly rated according to the MES. Qualitative and quantitative data indicated that most mentees found the mentoring program to be a valuable experience. A majority of the mentees (91%) expressed interest in remaining within the organization after the conclusion of their APP fellowship. In conclusion, there is a need for additional support for novice NPs within our organization. A strengthened mentorship program is a sustainable strategy that has the potential to further improve role transition, intent to remain within the organization, and feelings of support for novice NPs.

## 09 IMPLEMENTATION OF INDIVIDUALIZED PAIN MANAGEMENT IN VASO-OCCLUSIVE PAIN CRISIS AND THE EFFECT ON HOSPITAL LENGTH OF STAY

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Sickle cell disease (SCD) is the most common genetic disease in the United States affecting 1 in 500 African Americans. Dedicated healthcare providers with SCD expertise are scarce, thus patients with SCD utilize emergency services due to lack of specialty care. Cost

of care for VOC is estimated at greater than 2.4 billion dollars annually. The average hospital stay for patients with VOC is 9-11 days. Inpatient hematology/oncology providers noted patients with VOC are often under dosed, leading to extended hospital stays and readmissions. Coordination of care with specialized teams prevents further complications, decreases length of hospital stay, and improves quality of life. Specialty nurse practitioners and nurses may serve to bridge this gap in care by utilizing evidence-based pain management practice protocols. The purpose of this project was to develop and implement evidence-based practice protocols for inpatient nurse practitioner teams to treat sickle cell pain crisis and evaluate effectiveness by measuring hospital length of stay and subsequent cost of care. In conjunction with a specialized SCD attending physician and outpatient specialty nurse practitioner, individualized initial pain protocols were developed as well as a team of specialty nurse practitioners to care for patients with uncomplicated VOC. Inpatient and outpatient Sickle Cell teams met weekly to discuss pain management protocols and disease management. Additionally, patients are placed on hematology/oncology units allowing for specialized nursing care. These interventions allowed for expedited, aggressive pain regimens for Sickle Cell patients. Hospital length of stay for patients with VOC across the medical institution was evaluated over the past 5 years. Average cost of care for this population was determined to be \$1300 per day. Hematology nurse practitioner teams demonstrated an average of 3.9 – 6.6 days compared to other provider teams averaging up to 14 days. This intervention resulted in an average cost savings of \$808,080 per year. The practice protocols allowed for improved access to specialty care and expedited pain management. As a result, patients with VOC experienced improved pain control and reduced length of stay. Utilization of specialty nurse practitioner teams for patients with VOC in other institutions could improve quality of life for patients and decrease hospital length of stay and healthcare costs.

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## CLINICAL PRACTICE

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## 010 MALNUTRITION SCREENING TOOL IMPLEMENTATION—HARDWIRING PRACTICE DURING A PANDEMIC

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Malnutrition in oncology patients, as supported in several studies, is associated with several negative outcomes, including decreased quality of life, delayed wound healing, increased morbidity and mortality rates and decreased treatment tolerance. Early and ongoing Nutritional Risk Screening is critical to improved clinical and psychosocial patient outcomes. The pandemic, however, have created new challenges in hardwiring clinical workflows in telehealth and face to face visits. Purpose: Staff engagement, development and consistent implementation of Nutritional Risk Screening and Referral process, in collaboration with Oncology Dietician team. Interventions: (a) Go to the Gemba. Focus groups and rounding to identify barriers to consistent completion of Malnutrition Screening Tool and Referral process. Barriers identified: (1) Time—multiple competing priorities, including tracking/scheduling of mandatory COVID testing for patients undergoing cancer-related IV therapies. (2) Overwhelmed patients—patients reluctant to have an additional appointment with a Oncology Dietician due to multiple appointments and fatigue. (3) Float and new staff not aware – ensuring awareness by entire clinical team of assessment expectations and why it’s so important. (4) Fatigue – staff reported feelings of emotional exhaustion due to rapidly changing demands of pandemic environment, including extensive growth in patient volumes and acuity. (5) The Answer is in the Room. Re-energize unit-based councils to focus on eliminating barriers, in collaboration with department leaders. Focus on *Keeping It Real*. (b) Create automated referral process based on Malnutrition Screening Tool (MST) score. We look forward to sharing what we’ve learned along this journey, including: (a) Development of Float Staff Quick Reference Tools, (b) Improved staff onboarding, and (c) Disease team champions—their tips and tricks. Metrics: MST assessment and referral compliance by disease team tracking and discussion at staff meetings, unit-based council meetings, Daily Engagement System (DES) Tier 1 daily huddles. Our lack of traction in this essential area over the past year highlights the importance of continuous improvement through staff-led and leadership-supported interventions. The world changed dramatically in the last 18 months. As oncology nurse leaders and nurses, we acknowledge the challenges and focus on supporting autonomy and empowerment as we work together to hardwire change. We look forward to sharing our team-led successes with you at ONS Congress 2022.

## **O11 CREATING AND EVALUATING AN ORAL CHEMOTHERAPY CLASS PATIENT AND FAMILY EDUCATION VIDEO**

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Patient and family education about oral chemotherapy is a complex process. In addition to basic education about the drug, its common side effects and treatment schedule, providers must also address topics such as safe storage and handling of oral chemotherapy and the importance of adherence. In-depth education of all areas may be challenging for clinicians to adequately cover, and for patients and families to absorb, in a busy clinic setting. The purpose of this project was to create an easily accessible oral chemotherapy patient and family education video that highlights key content for this treatment modality. Designed using universal health literacy principles, the video could be watched on any device with an internet connection, between the time of a physician consult and the start of oral chemotherapy. Outpatient nurses and oral chemotherapy pharmacists worked with the patient education office to create an oral chemotherapy patient and family education video. The team reviewed and preserved fundamental concepts from the IV chemotherapy class, while also creating content specific to oral chemotherapy concerns. Prior to launch, cancer center staff and patient and family advisory council members reviewed and provided feedback about the course content. The final 30-minute video was placed on a secure website for patients and families to access and provide feedback via a brief survey. Staff encouraged patients to watch the video and share it with family members prior to starting oral chemotherapy. Data includes survey responses for overall satisfaction, video length and viewer confidence in their understanding of key education concepts. Understandability and actionability scores from the audiovisual Patient Education Materials Assessment Tool (PEMAT) will also be shared. This project outlines the process for creating and evaluating a patient and family education video that emphasizes topics unique to oral chemotherapy. Engaging content experts helps facilitate buy-in and promotion of the re-

source. Offering this content prior to the start of oral chemotherapy is ideal since it stresses and reinforces concepts that promote safety and adherence.

## **012** **A DIFFERENT KIND OF PCA: PATIENT CONTROLLED AROMATHERAPY: AN EVIDENCE-BASED PRACTICE INITIATIVE USING PEPPERMINT OIL AROMATHERAPY IN ONCOLOGY PATIENTS**

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Up to 80% of oncology patients experience nausea from disease process or treatment. The physical and emotional distress of nausea potentially decreases quality of life. Peppermint oil aromatherapy can reduce post-operative nausea. Mapp et al., (2020) found it reduced nausea in oncology patients receiving chemotherapy. Following Iowa Model framework, a 32-bed inpatient medical/surgical oncology unit implemented an evidence-based practice (EBP) initiative using peppermint oil aromatherapy with patients at risk or experiencing nausea with the purpose of preventing or decreasing patient's negative perceptions of nausea. The EBP team created peppermint oil aromatherapy cups consisting of two-by-two gauze and two drops of peppermint oil placed in lidded sterile containers. Nurses offered aromatherapy to alert, oriented, patients without respiratory compromise who were at risk or experiencing nausea. The multiple-use cup remained bedside. Nurses instructed patients to breathe in for the count of three, hold for the count of three, exhale through pursed lips, and repeat three times as needed in anticipation of, or for nausea. Patient surveys collected from March 2021 to July 2021 evaluated the aromatherapy EBP initiative. Twenty-four females (80%) and six males (20%) responded (n=30). Eighteen (60%) were surgical oncology patients, and sixteen (53%) had surgery during their current admission. Twelve (40%) were medical oncology patients. Patients rated nausea as 0 (none), 1 (anticipated), 2 (mild), 3 (moderate), 4 (great), 5 (severe) (Halpin et al., 2010). Twenty-nine (97%) experienced nausea within the last 24 hours. Nineteen (63%) received nausea medication in the last 24 hours. Thirty (100%) used aromatherapy. Twenty-two (73%) rated

nausea lower after using aromatherapy (40% adjunct antiemetics, 33% aromatherapy alone). Twenty-two (73%) used aromatherapy multiple times over the last twelve hours. Nausea mean was 2.73 before aromatherapy and 1.4 after aromatherapy. Twenty-four (80%) rated overall satisfaction as very satisfied or satisfied. Peppermint oil aromatherapy is a safe, affordable, nurse driven intervention that can reduce nausea in oncology patients. In this EBP initiative patients who used aromatherapy kept it bedside and used as needed giving them a measure of control in their cancer trajectory. Patients expressed satisfaction per survey response and by using peppermint oil aromatherapy multiple times.

## **013** **DEVELOPMENT OF AN INPATIENT ONCOLOGY-SPECIFIC SEPSIS SCREENING TOOL**

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Sepsis is one of the leading causes of noncancer-related deaths among oncology patients. The inpatient oncology population possesses many risk factors that increase their susceptibility to developing infection that can rapidly progress to sepsis. Thus, early identification of sepsis is crucial. Our current electronic institutional Sepsis Screening (e-ISS) Tool does not include oncology-specific risk factors. Developing earlier recognition of signs and additional risk factors, lead to better patient outcomes. Therefore, a nurse-led oncology-specific sepsis screening (OSS) tool was created with the goal of identifying sepsis in our patient population that may otherwise be missed using the current tool. Purpose/PICOT: In oncology patients, how does use of an OSS tool, compared to current practices, impact early intervention and recognition of sepsis during hospitalization? An OSS tool was created, which considered: (a) Patients having two or more SIRS criteria, and (b) patient risk factors, including presence of central line, mucositis, neutropenia; age >60, recent steroids or chemotherapy, and history of pneumonia or COPD. The OSS tool was used in conjunction with the e-ISS tool at the start of each shift. If there was a discrepancy between the two tools, nurses were encouraged to advocate for early



intervention by contacting the healthcare provider to activate the sepsis bundle, if it had not been activated within 48 hours. Educational posters were also placed at the nursing station to encourage sepsis awareness on the unit. 167 patients were screened from February 2021 to April 2021. 28% of patients screened positive for possible sepsis using both tools. 21% screened positive on the OSS tool, despite screening negative on the e-ISS tool. Most patients who screened positive already had the sepsis bundle activated within 48 hours. However, 5% of patients did not have the bundle activated, and thus early intervention was delivered. Data shows that 21% of oncology patients screened with the e-ISS tool were potential missed positives. This demonstrates the need to broaden the positive sepsis criteria for oncology patients, using oncology-specific risk factors that would otherwise be missed with a universal screening tool. This nurse-led initiative potentially decreased morbidity among our oncology population. Providing the healthcare team with a more user-friendly, OSS tool assists with specialized screening and early intervention.

#### **014** **USP 800—IT'S ALL ABOUT YOU!**

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In 2018 Oncology nursing clinical specialists (ONCS) reviewed the USP800 Guidelines-hazardous drug (HD) list from NIOSH. The expanded administration of Group 2 and 3 HD was identified as an emergent priority for teammate safety. The ONCS advocated and received strong nursing leadership support. In 2019 a team was formed to develop an HD safety initiative. The purpose was to improve teammate knowledge and just in time resources to decrease HD exposure risks for all teammates across the HD trajectory. Standardized safety processes- yellow for Group 1-High Risk HD (HRHD) and pink for Groups 2 & 3-Low Risk HD (LRHD). Color allow for quick visual identification of HD medication labels, IV line and bag stickers, and precautionary door signage (PDS). The ONCS created the PDS with input from other departments and applied the health literacy concepts-simplistic language, large photos, which enabled application of appropriate hospital specific personal protective equipment (PPE). The laminated PDS allows precaution start/stop dates to be modified. The back of the PDS includes just in time quick views of: the level of risk, pre/post administration safety and

spill management. ONCS interventions utilized ONS HD standards. The adoption of a broader definition of HD fertility risk for both males and females. The use of closed system transfer device for all HD administration. Established safety processes for all crushed/split oral HD. The use of a gown in the PPE for all HD. Expanded HD spill kit to include a decontamination wipe and power air purifying respirator designed for vaporization safety. The ONCS developed computer-based learning (CBL) modules with application questions for all clinical and non-clinical teammates. Then conducted interactive sessions throughout the system to reinforce application of the content and to answer questions. Teammates expressed appreciation of the new knowledge and interventions supported by the institutions culture of safety designed to protect them. The ONCS are greatly encouraged by the critical thinking demonstrated during discussions as they assess, analyze and apply safety principles. Historically, healthcare initiatives have focused on patient-safety. Our initiative brought attention to potential teammate safety risks associated with HD exposure. Safety initiatives may change, but it is essential to support all nurses in the provision of safe care for themselves, coworkers and the patient.

#### **015** **BUILDING CAR T RESOURCES FOR CLINICAL NURSING**

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As the FDA continues to approve commercial Chimeric antigen receptor T (CAR- T) cell treatments, there is a growing need for quick access to resources when providing direct care to patients undergoing treatments. Commercial products require strict oversight by the organization to ensure all FDA-required components are met due to the high risk of patient mortality related to the treatment. Having resources available for bedside nurses to assist in early recognition of cytokine release syndrome and/or immune effector cell-associated neurotoxicity syndrome are vital to patient safety. Currently, our program provides five different commercial products that have slightly different interventions based on patient symptom grading. Bedside nurses are tasked with utilizing our SBAR communication process with the on-call provider to ensure early intervention. To provide nursing immediate access to materials, CAR T resources were placed on Microsoft Teams to allow

mobile and remote access. Interventions included creating a Teams channel titled CAR T Binder, creating separate folders for commercially approved products, organizing the folders in a standard manner to ensure quick access to needed documents, and maintaining the resources to ensure accuracy for clinical nurses. In evaluating the process, nurses expressed the ease of finding the information on their personnel phones and increased comfort level with knowledge of where to find immediate access to the information. For staff who do not choose to use their phones, they are able to log in to the Teams site on desktop computers and access the information. The resources they have found the most useful are the admission and prior to infusion check list. They can review their prior education materials before caring for the patient. Due to lack of provider access to Teams, the decision was made to keep a hard-bound binder available on the unit for providers to access the grading and treatment guidelines. The quick access to resources was well received by staff. With the addition of new commercial treatments, new folders and materials will be added. The leadership team continues ongoing conversations regarding the Teams channel and suggestions for additional resources needed. As this field continues to expand to multiple different cancer diagnoses with varying treatment guidelines, it is vital to assist clinical nurses in providing quality patient care and ensuring early recognition for patient safety.

## **016** **ELIMINATING BARRIERS TO FERTILITY DISCUSSIONS IN AYA ONCOLOGY**

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Adolescents and Young Adults (AYAs) ages 15-39 account for 70,000 new cancer diagnoses in the U.S. annually. Many AYAs have not yet begun or completed building families; thus the reproductive consequences of treatment have potentially life-altering effects. Fertility related discussions are crucial, yet multiple barriers exist. Previously identified barriers include lack of time, potential delay in treatment, lack of

knowledge about fertility preservation procedures, perception of cost burden, and poor fertility specialist referral network. Nurses specifically cite a lack of familiarity with fertility risk and preservation options as well as a lack of institutional guidelines. The purpose of the project was to eliminate barriers for AYAs regarding fertility discussions by implementing several strategic programmatic changes. The primary intervention was providing a discussion regarding fertility risks and fertility preservation options with all patients in the AYA clinic. A collaboration with a reproductive endocrinologist and infertility (REI) specialist was established. Their collaboration with the AYA patient navigator has allowed earlier referral of female AYA patients interested in fertility preservation. An AYA consult service was created to address the urgent fertility needs for male inpatient and a cryobank was identified willing to coordinate inpatient banking. Financial concerns are a frequent barrier to fertility preservation. Philanthropic funds were secured to support financial needs and reduced pricing was negotiated. An Oncofertility Best Practice Advisory (BPA) was developed for use in the institution-wide electronic medical record. It alerts the oncology team to discuss fertility and place a consult to the AYA service when placing a new chemotherapy treatment plan. Implementation of an AYA patient navigator, development of an inpatient consult service, and financial relief improved sperm banking access. Addressing fertility at all AYA visits and embedding a reproductive endocrinologist in our AYA clinic facilitated fertility preservation counseling. An institution wide Best Practice Advisory in the electronic medical record increased AYA/Oncofertility awareness. Collaboration and strategic planning are key to eliminate potential barriers regarding fertility discussions faced by AYAs. Oncology nurses must lead in programmatic changes to reduce the gap in fertility discussions with AYAs. Nurses will need to be able to leverage not only technology to maximize standardization of care but also establish intradisciplinary collaboration.

## **017** **REDUCING HOSPITAL LENGTH OF STAY FOR PATIENTS UNDERGOING MAJOR HEAD AND NECK SURGERY**

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During 2020, the Department of Otolaryngology was alerted by the Medical Institution that their patients had exceeded the expected hospital length of stay. The majority of these patients had undergone major head and neck surgery with the head and neck team at the

associated NCI Comprehensive Cancer Center. Major head and neck surgery involves free flap reconstruction, transplantation of tissue to reconstruct areas of the upper aerodigestive tract surgically removed due to benign or malignant tumors. The Advanced Practice Providers (APP) spearheaded a quality improvement project to reduce the length of stay for patients scheduled to undergo major head and neck surgery. The intervention was an independent visit with the APP, separate from the surgical consult, to discuss with the patient and their support system a detailed surgical plan, day by day description of their inpatient stay, and expectations of wound care and care of tracheostomy tubes and feeding tubes. Based on this discussion, discharge planning would begin before the scheduled surgery. Second, medical clearance and cardiology clearance was reviewed by the APP and all comorbidities were added to the patient's problem list to accurately capture patient acuity. Third, the intervention included a preoperative visit with Speech Language Pathology (SLP) for assessment and education of speech and swallow expectations. Fourth, the intervention included evaluation of Thyroid Stimulating Hormone (TSH) to detect risk of poor wound healing and post-operative complications secondary to hypothyroidism. This information was communicated, visible, and accessible to the patient and their support system. It was also communicated to all involved inpatient teams. Last, a standard assessment protocol by inpatient Physical Therapy (PT) on post op day one was established as well as inpatient SLP on post day two. The quality improvement project was planned when the observed/expected length of stay was 1.13 in November 2020. Once the quality improvement project was initiated during January 2021, the observed/expected length of stay remained below 0.80 for the remainder of the year. The quality improvement project not only directly impacted a hospital metric, it resulted in improvement in coordination of care between outpatient and inpatient teams. Patient outcomes improved related to wound healing, mobility, speech and swallow, and discharge. Last, patients and their support system reported improved satisfaction of care during the perioperative time.

## **018 INCREASING PHYSICAL ACTIVITY IN THE WORK PLACE: MODERATING COMPASSION FATIGUE AND BURNOUT AMONG AMBULATORY ONCOLOGY REGISTERED NURSES**

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This study examined the impact of physical activity among ambulatory oncology registered nurses (RNs) on measures of compassion fatigue and burnout. Compassion fatigue and burnout are well described phenomena for RNs. Physical activity has been shown to have a positive impact on reducing compassion and burnout. A 12-week quasi-experimental study included a convenience sample of RNs with varying roles across three ambulatory care cancer clinics within an academic health system. Physical measurements (BP, HR, BMI) as well as the Maslach for Human Service Workers version survey (MBI-HSS), Professional Quality of Life Compassion Satisfaction and Compassion Fatigue (PROQOL), and Yale Physical Activity Survey (YPAS) were collected at weeks 0, 6, and 12. Daily steps were tracked using participants' personal devices (i.e. smart phone, smart watch, FitBit). Weekly emails were sent to participants with reminders to engage in physical activity and track steps. Among the 172 eligible RNs, 53 participated (30.8%) and were 39 ± 11.0 years of age, the majority female (98%), 71% with bachelor's degree as highest level of education, averaged 13 ± 10.4 years as RN with 11.6 ± 10.0 years in oncology, and primarily worked in infusion (44%) or in the clinic (42%) environment. Baseline physical measures were within normal ranges and did not change over the 12-week study period. Leisurely walking increased significantly ( $p = 0.019$ ) and change in average step counts from week 0 to 12 increased for the full week (↑29%), work week (↑37%), and weekend (↑10%). ProQoL secondary stress index improved from week 0 to 12 and MBI scores demonstrated burnout at low levels, depersonalization at moderate levels, and personal achievement trending from moderate to high levels. Amidst the prolonged COVID-19 pandemic, nurses have been tasked with an increasingly demanding workload. Physical activity is one strategy nurses can incorporate into their daily routine to moderate risk for compassion fatigue and burnout. Given the threat of nursing workforce shortages, the healthcare system must recognize this and foster wellness. To cultivate a sustainable healthy work environment, other measures to reduce compassion fatigue and burnout should be promoted.

## **019 IMPROVING OUTPATIENT INFUSION PRODUCTIVITY WITH THE CREATION OF LAB APPOINTMENTS**

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The Dan L. Duncan Comprehensive Cancer Center is a rapidly growing center which uses a coupled visit model to provide same day doctors visit, labs, and infusion. The infusion appointment growth rate has nearly doubled in the last year meaning chair utilization and productivity are significant measures for growth. Data showed that there was as large number of patients arriving late to their infusion, likely due to delays in lab and clinic appointments prior to coming. The average for one month demonstrated over 300 wasted chair minutes from late infusion arrivals. Late arrivals also equated to incremental staff overtime when staying late to care for patients, which totaled nearly 216 hours over a 6 month period. The goal of the project was to improve patient compliance with arriving the requested 1 hour prior to their infusion appointment time to complete required blood work. In turn, this would decrease late arrivals to infusion appointments, increase chair utilization, and improve scheduling efficiency to allow more patients to be cared for overall. Working with IT and the electronic health record teams, a "Lab Appointment" option was created for scheduling to incorporate for each patient. This appointment was timed one hour prior to infusion start time and coupled with each treatment appointment. An appointment reminder for the lab appointment was sent to the patient via phone and/or text message. A MyChart message was sent to the patient the day prior, and the lab appointment was included on each After Visit Summary to remind them of their schedule. The project has allowed the infusion center to see a greater volume of patients and decreased the amount of late arrivals, overall improving chair utilization. Post implementation data is forthcoming. An increased number of cancer diagnosis over the last year, staffing shortages, and the inability to create more infusion space, there was a need to address wasted chair time and productivity. This project allowed us to decrease the number of late arrival minutes, decrease overtime, and increase the number of patients we are able to see in the clinic without adding staff or space. This innovation is based on utilization of the EHR and scheduling processes to improve chair utilization and the ability to see a higher volume of patients.

## **020 MOVING CANCER TREATMENTS TO THE CURB: AN INNOVATIVE STRATEGY TO CARE FOR AMBULATORY PATIENTS DURING THE COVID-19 PANDEMIC**

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Coronavirus disease 2019 (Covid-19) has drastically affected the delivery of cancer care. Cancer patients have experienced increased fear and anxiety affecting their ability to seek appropriate treatment and follow up. Cancer patients who have Covid-19 have a higher mortality rate compared with those without cancer. This highlights the need for cancer patients to make every effort to reduce exposure. This academic medical center saw an increase in the number of cancer patients who were unwilling to return for treatments and follow up visits. The purpose of this initiative was to implement two curbside cancer clinics for the treatment of patients with solid tumors and hematologic malignancies. This innovation allowed patients and their caregivers to remain in their vehicle without having to enter the cancer center. Curbside clinics, designed to provide an identical standard of care as performed in the infusion clinics, opened for patient care in March 2020. Therapies moved to these clinics included all intramuscular, subcutaneous, and intradermal cancer and cancer supportive care medication injections. Antineoplastic agents including chemotherapy and immunotherapy were also administered in these clinics. Procedures such as blood draws, central vascular access care and fittings for scalp cooling were other services provided. The CNS and designated clinic RNs collaborated with pharmacy, hospital security, facilities, and environmental care staff to develop a comprehensive implementation plan with the required equipment and safety measures. The Covid-19 pandemic will likely impact cancer care for an extended period. Both patients and providers have embraced the Covid-19 curbside clinics. Staff report high satisfaction with this novel strategy for care delivery. Patients and caregivers have been extremely satisfied with the services provided and have recommended this as a permanent strategy for delivery of cancer therapies to eligible patients. Since opening, over 5,000 patients have visited these curbside cancer clinics. Curbside cancer clinics offer patients a way to receive therapies by Oncology nurses without the need to enter the health care setting, thus reducing their risk of exposure to Covid-19 and reducing associated stress and anxiety. This academic medical

center has implemented permanent spaces and equipment to ensure that curbside clinics become a permanent part of the cancer program.

## **021 A TEN-YEAR IMPACT OF A MULTIDISCIPLINARY PRACTICE COUNCIL IN AN OUTPATIENT TREATMENT CENTER**

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Nursing care in Oncology Treatment Centers (OTC) often change as a result of new research that guides evidence-based practice (EBP); however, these changes can be challenging to implement into practice. Our unit-based Clinical Practice Council (CPC) was developed to improve translation, development, and dissemination of EBP into nursing policy and guidelines. The purpose of this project was to review the 10-year impact a CPC can have on quality and standardization of nursing care in an OTC. The CPC is an interdisciplinary team (nursing, pharmacy, advanced practice providers, educators, leadership, and ad hoc members) chaired by an OTC oncology certified nurse. The primary goal is to examine and implement standards of clinical practice. Agenda items are submitted by any OTC or ancillary staff for discussion prior to bi-monthly meetings. These items are assigned for policy review, research, and benchmarking as appropriate. Insight and information resources include ONS Communities, academic journals, and networking with other institutions. Action items are generated from agenda topics and reflected in the meeting minutes. Minutes are distributed to all OTC staff with associated policies, practice alerts and other inter-departmental communication. In some cases, items are escalated to other committees, or have been developed into research projects. We evaluated the CPC's productivity (completion of action items and communication of outcomes to staff), common agenda items addressed, and lessons learned. The CPC has proven to be an excellent venue to define best practice and develop standards of care for oncology nursing staff. Examples of practice issues that have been resolved include: desensitization protocols, short expiration drug administration, premedication interval times, and Cisplatin administration. Several barriers to CPC productivity were identified: nursing shortages/turnover, appropriate meeting times, and lack of time to work on projects. Converting to zoom

resulted in better attendance and thus engagement. The CPC's mission is to increase patient safety and satisfaction, promote consistent nursing practice, better communication of practice changes, and professional development among nursing staff. The CPC also instills a sense of pride and accountability for the quality of care delivered in the OTC. Developing a CPC in oncology practice settings promotes excellence in nursing and can be implemented in any unit-based practice setting.

## **022 YES! A NEW GRADUATE NURSE'S FIRST JOB CAN BE OUTPATIENT**

**Mary Ann Plambeck, MSN, RN, OCN®, NEA-BC, Duke Health System, Hillsborough, NC**

Traditionally, all new graduate nurses are encouraged to take inpatient jobs on medical/surgical units and ambulatory clinics and infusion centers hired experienced nurses. With an ongoing national nursing shortage, traditional thinking needed to be replaced with thinking outside the box. The purpose of this project was to lead change in hiring practices for ambulatory oncology clinics by fostering a new graduate nurse positions and onboarding practices. First, we sought to identify how many new graduate nurses we could support within our clinics and what areas could provide this opportunity. This required examining the total number of open positions, preceptors with bandwidth, and whether the program could be supported across the health system. Once we landed on the number of hires, we partnered with DUHS Nursing Support & Retention to procure the positions. This allowed the new graduate nurses to rotate to the various clinic without impacting clinic productivity. Second, we had to socialize the idea with oncology leadership, providers, and clinic staff. This included sending emails, speaking at staff and disease group meetings, and other group forums. Our clinical educator partnered with our hospital oncology educator and Clinical Nurse Specialists to create the onboarding process, micro-learnings, and clinical milestones for each area. A schedule was created so that each new hire would rotate to various medical/surgical clinics, radiation oncology, and infusion units across the health system over 12 weeks. At the end of the rotation, the new nurse would be hired into an open clinical position. This program resulted in onboarding 10 new nurses. All being placed in their first choice position. While this program received excellent feedback from participants and leadership, all have agreed that smaller hiring cohorts will improve the experience



for all involved. The program exceeded expectations and can be easily replicated in other facilities and departments. Success was due, in large part, to the work of our cancer center clinical educator did with each nurse manager and preceptor to ensure they were prepared for supporting the new nurse experience. Hiring new graduate nurses directly into the outpatient setting infused the clinics with new energy, hope and enthusiasm. The program success relies on many collaborations, including recruitment, hospital education, and all clinic staff.

### **023** **MENTORSHIP: A LIFELINE FOR ONCOLOGY NURSES DURING THE COVID-19 PANDEMIC**

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As nurses have confronted COVID-19, arguably the most serious health crisis of our time, the need to care for themselves and their colleagues has become crucial. A meta-analysis published in 2020 showed the toll on healthcare workers was significant for anxiety, depression, and insomnia. The department of nursing at a large urban cancer hospital created and launched a successful mentoring program in 2016. With many institutional changes driven by COVID-19, the program was paused at the height of the crisis. In Fall 2020 the decision was made to re-open enrollment and participation surpassed all previous cohorts, as a record number of nurses initiated mentoring partnerships while the pandemic was still raging. Program leaders sought to understand the experiences of nurses participating in the mentoring program during COVID-19, assessing its impact on psychological well-being, professional support, and job satisfaction. Traditional means of connecting mentoring partners were replaced during the pandemic by an entirely virtual platform. A survey was sent to 193 mentoring participants from the Fall 2020 and Spring 2021 cohorts representing nurses and APRNs in various positions across the institution. The survey captured demographics followed by eight mentoring-specific questions. 61 participants (N=61) responded, a 31.6% response rate. Survey results showed 70.5% of respondents felt that their mentoring partnership improved job satisfaction and 77% said mentoring was a source of professional support. Most significantly, 72.2% of respondents state their mentoring partnership posi-

tively contributed to their psychological wellbeing during the COVID-19 pandemic. A virtual mentoring platform prompted by COVID-19 had a positive impact on participants overall. Survey results show that the program improved job satisfaction, which can impact staff retention rates. Professional development remained dynamic because of the mentoring program. Nurses felt supported during the pandemic both personally and professionally. Final presentation will share the program structure and a full review of survey data. The virtual format of the mentoring program leveraged technology to allow record-level participation, personal connection, and flexibility during an uncertain time. Large group sessions were combined with interactive virtual break-out rooms. In these sessions, partners met, discussed goals, and engaged in didactic exercises. This program could be implemented at other centers to increase nursing job satisfaction, retention, and psychological well-being.

### **024** **INITIATING DELIVERY OF STANDARD AND PHASE 1 CAR T INFUSIONS IN AN AMBULATORY TREATMENT CENTER (ATC)**

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The uncanny characteristic of cancer has made the disease more complicated over the years, demanding the medical field to seek innovative treatment strategies continuously. The Chimeric Antigen Receptor bearing T-cell (CAR T) has emerged as the new paradigm of cancer immunotherapy to tackle cancer's resistance mechanisms in some hematologic malignancies that have relapsed or are unresponsive to treatments. The infusion of CAR T initially began in the inpatient settings and is now evolving into the outpatient units, after gaining remarkable outcomes. The purpose of this project was to develop an educational program for ambulatory nurses to ensure the success of providing this treatment in the outpatient center. A literature review was conducted, and studies show that an infrastructure must be in place because of the complex care requirements and significant neurotoxicities and side effects of CAR T treatments. In January 2019, the ATC leadership team built a robust outpatient educational program to deliver ap-

proved standard and phase 1 CAR T treatments and embedded them into existing workflow processes in a unit that also provides care for stem cell patients. Solidifying the nursing education was crucial for this project, and competencies included completing CAR T modules, hands-on training and check-off on the inpatient lymphoma/myeloma unit, and in-service by research investigators. Thorough assessment, early detection of the toxicities, and documentation in the electronic medical record (EMR) using the standardized assessment tools are integral to prompt and safe care for these patients. Concurrent with the training, an extensive collaboration with the medical teams, apheresis department, research investigators cell lab, research lab, pharmacy, and scheduling team was completed. Twenty-one nurses achieved CAR T competency, and in March of 2019, the ATC began to provide care for CAR T patients by administering lymphodepleting chemotherapy and doing post CAR T assessments. The CAR T infusions began in December 2019 and has successfully infused seventy CAR T cells. Fifty eight of those were phase 1, three were T-cell for COVID-19 patients, and nine were standard CAR T up to date. Although CAR T therapies may be complex and have varying information and monitoring parameters, these advances are changing the current and future cancer care environment, leading to significant improvements in patient care and outcomes.

## **025 PSYCHOSOCIAL ASPECTS OF FEMALE FERTILITY PRESERVATION COUNSELING**

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Cancer treatment can impair fertility and prevent the achievement of family building goals; however, reproductive technology allows for fertility preservation (FP) before treatment. Pre-treatment fertility counseling is an essential element of holistic care. Fertility Nurse Specialists (FNS), advanced practice nurses with specialized training in onco-fertility, can play an integral role in ensuring patients receive appropriate counseling to make informed decisions about FP. This project describes key components in structuring

and refining nurse-led onco-fertility counseling to females: 1) the FNS role; 2) factors influencing patient decisions about pre-treatment FP; and 3) levels of decisional conflict among patients who received pre-treatment fertility counseling. At our NCI-designated cancer center, patients are offered one-on-one counselling to review the risks treatment can pose to fertility and discuss FP options. When meeting with female patients, the FNS reviews information on the practical aspects of egg/embryo freezing, including administration of hormonal injections and use of transvaginal ultrasound. Psychosocial factors, such as the desire to have (more) children, objections or concerns about using assisted reproductive technology, financial resources, and family support, are also explored. To explore the patient experience, a sample of female stage I-III breast cancer survivors who had received FP counseling by one of our FNSs was recruited via email to participate in an investigator-designed and Institutional Review Board-approved online survey, in which respondents ranked the importance of potential decision-making factors and reported their level of decisional conflict about undergoing pre-treatment FP. Among 209 respondents (30% response rate), frequently endorsed decision-making factors included ability to feel hopeful about the future (91%), concern about future regret (90%), likelihood of success (88%), desire to have more children (88%), feeling overwhelmed at diagnosis (88%), cost of FP (78%), and concerns about taking hormones (73%). The Decision Conflict Scale-SURE (DCS-SURE), a validated 4-item tool, measured uncertainty related to their FP decision. On a 0-4 scale, with scores  $\leq 3$  suggesting some decisional conflict, 68% of respondents experienced no decisional conflict (median 4, IQR: 1). Limited family building options after treatment is a source of distress for many cancer survivors. FNS counselling that describes the FP process and allows patients to explore the clinical and psychosocial factors that are important to them, is key for helping patients make informed decisions with minimal decisional conflict.

## **026 ORAL INVESTIGATIONAL CHEMOTHERAPY/ IMMUNOTHERAPY VERIFICATION PROCESS**

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Oral Investigational Chemotherapy drugs are dispensed and administered in our Phase 1 Clinical Trials ambulatory center. Patients receive their

drug bottle on day one and are responsible for taking this medication at specific time points related to the study. The infrastructure of our electronic medical record (EMR) has not allowed for barcode scanning of these drugs at the time of dispense or administration, thereby utilizing the nursing note to document dual nurse verification and timing of drug administration. This workflow was not in line with our current Chemotherapy/Immunotherapy Administration Policy. The purpose of this project was to safely administer oral investigational chemotherapy drugs in accordance with our current Chemotherapy/Immunotherapy Administration Policy to complete independent verification and appropriately scan and document drug administration. Utilizing an interdisciplinary team, a process was developed to improve the current infrastructure of our EMR to allow for two RN independent verification through barcode scanning and documenting when a drug is dispensed and administered. The EPIC team and pharmacy worked to develop the capabilities in the background to allow for scanning of the pharmaceutical company sponsored drug bottle(s) for dispensing by creating a new label that will link the order to the medication administration record (MAR). There is an additional order linked for administration, which allows the nurse to document “patient self-administer” to ensure documentation of both events (dispense and administration) in the MAR. The “patient self-administer” documentation allows for real time capture of medication self-administration while in subsequent visits. Compliance of the new workflow is evaluated measuring “barcode scanning compliance” via an automated report. Additionally the number of safety events reported through our electronic event reporting system will continue to be monitored. To date, nursing has maintained compliance with the policy and no safety events have been reported. Independent verification and documentation is paramount for patient safety with high-risk medications. Verification, administration, and documentation of oral investigational chemotherapy agents had not been in alignment with our policy. Pulling together an interdisciplinary team has allowed a new process to be developed and implemented to ensure patient safety and practice according to our institutional standards. Utilizing a new workflow for documentation of oral investigational drug administration has allowed the verification of investigational drugs dispensed to align with our current policy for Chemotherapy/Immunotherapy Administration.

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## LEADERSHIP/MANAGEMENT/EDUCATION

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### O27

#### ADAPTATION OF ACUITY SCALES IN THE AMBULATORY INFUSION SETTING

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Oncology healthcare has shifted to the outpatient setting resulting in acute patients requiring more skilled nursing care. Staffing models have not reflected this transition which has led to increased nursing burnout, inadequate staffing, and patient dissatisfaction. At an NCI-designated cancer center, a team of nurses, nurse leader and clinical nurse specialist searched to find the best acuity scale to utilize in the outpatient infusion setting. This presentation will describe the comprehensive literature review, development and pilot of an acuity scale dedicated to the outpatient infusion setting. This customized scale can be used to measure patient acuity, determine staffing needs, and ultimately increase patient and nurse satisfaction. A literature search was conducted using several databases and assistance from the institutions librarian. A total of 15 articles were included and additional data was collected from various cancer institutions. Outcomes showed value and success when an acuity scale was used every day for staffing. The group took 3 validated acuity scales and merged them into 1 scale by combining a numeric scale from a pulmonary inpatient unit, full time equivalent (FTE) line from an intensity tool and an acuity-based scheduling template for infusions. The table is filled out in 2 parts and a numeric value is computed, which aligns with an acuity score and FTE line. The treating nurse assigns numeric values to remaining categories. The charge nurse can use to create assignments, determine staffing needs, and create better patient experiences. A small pilot of the tool was implemented to evaluate its accuracy with the outpatient infusion patient population. 61 charts were audited, and the scale was used to determine each patient's level of acuity. Results from the pilot showed 41% of patients fell in level 3 and 26% fell in level 4 acuity range. The scale is currently being re-

viewed by nursing research and pending institutional review board approval. Oncology patients should have individualized care specific to their needs. Each patient's level of care can be reflected through the utilization of a daily acuity scale. This can be a valuable tool for several health care settings. Utilization of these scales can lead to positive outcomes such as patient and nurse satisfaction, accurate staffing models, balanced unit productivity and decrease nursing burnout.

## **028 USE OF AN INTERACTIVE WEB PORTAL TO STREAMLINE NURSING COMMUNICATION ACROSS A MULTI-CITY AMBULATORY ONCOLOGY NEW GRADUATE RN PROGRAM**

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The current nursing shortage created an opportunity for our health system to design and implement a new graduate nursing program in the ambulatory oncology setting. Participants in the program rotated weekly through 10 different oncology clinics across 3 cities over 10 weeks. Real time collaboration and an ability to save and share confidential orientation documents among nursing leadership, preceptors, and new graduate nurses across all clinic locations were critical. The purpose of this project was to describe the development and impact of a universal access web portal as a means to facilitate efficient, real time nursing communication, document sharing, and collaboration across a multi-city ambulatory oncology new graduate RN program. A web portal was designed to share general program information including clinic and contact information, orientee rotation schedules, clinic specific objectives, weekly feedback tools, and preceptor resources. Preceptor access was granted to a secure workspace within the portal so that confidential orientation competency documents could be updated, saved, and viewed electronically, in real time from any clinic location. An online, interactive feedback form which generated an automated weekly email report to all preceptors was designed to facilitate efficient communication between preceptors regarding ori-

entee progress. A survey given to new graduate RN participants indicated that 100% (11/11) accessed the portal for information and found the portal helpful and easy to navigate. Analysis of the preceptor weekly feedback form submissions revealed a 63% (63/100) completion rate. Preceptors needed encouragement to complete and view the form during weeks 1-3 however subsequent use in weeks 4-10 improved significantly. Additional data regarding preceptor frequency and ease of portal use, as well as, effectiveness of weekly orientee summaries is still being analyzed. The web portal for oncology new graduate nurse program information, communication, and collaboration was successful and impacted program efficiency. While this portal was initially designed for a small cohort of new hires, it can be adapted for additional programs to enhance communication between preceptors, new hires, and nurse managers.

## **029 MANAGING MEDICAL EMERGENCIES IN AMBULATORY ONCOLOGY: IMPROVING CLINICAL STAFF SKILL, CONFIDENCE AND EFFICIENCY THROUGH SIMULATION BASED EDUCATION**

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As treatment regimens become more complex, and patient acuity increases, the risk for cardiac arrests (CA) expands within ambulatory oncology settings. Due to the infrequency of CAs BLS skills are underutilized. A needs assessment was performed revealing a lack of confidence in responding to high acuity, low frequency events. This initiative was developed to provide clinical staff with ongoing education to improve skills, confidence and efficiency in CA events through the utilization of in-situ mock codes. This educational initiative is a continuation of education that was provided to staff in 2020 utilizing an innovative simulation technique known as rapid cycle deliberate practice (RCDP). An educational needs assessment was completed prior to the in-situ simulation event to identify staff confidence in managing CA events. A plus/delta debriefing style was performed during the in-situ simulation event to promote learning, confidence and skill. A time study was conducted to identify areas of improvement regarding efficiency of emergency management interventions. 79% of ambulatory

staff reported not being involved in a CA in over a year. Prior to implementation of education on CA situations only 26% of the staff rated their confidence  $\geq 3/5$ , after didactic lecture and RCDP simulation 100% of participants rated their confidence  $\geq 3/5$ , 6 months post RCDP simulation education and prior to the implementation of in-situ mock codes 65% of ambulatory staff rated their confidence  $\geq 3/5$  in managing CA. In-situ mock code data demonstrates staff were able to initiate high quality CPR and activate emergency services in less than 60 seconds and the emergency response team was able to respond to the clinical area within 3 minutes and 14 seconds. Simulation-based education incorporating in-situ mock codes is effective in improving skills and confidence in response to CA. Data suggests that continuous education on CA management is necessary to maintain staff confidence of infrequent high acuity medical emergencies. Future plans include regularly scheduled in-situ mock codes to maintain skills and efficiency and a yearly educational needs assessment to evaluate confidence. Utilization of RCDP and in-situ mock codes are innovative teaching techniques to support staff development. RCDP and in-situ training can be used to teach other oncological topics such as management of hazardous drug spill response, sepsis and hypersensitivity reactions.

### **030** **THE ONCOLOGY RN'S NO-GOOD, VERY-BAD DAY: HAZARDOUS DRUG SPILL AND EXTRAVASATION SIMULATION TRAINING**

**Caitlin Brecklin, MSN, RN, OCN<sup>®</sup>, CMSRN, Froedtert & the Medical College of Wisconsin, Milwaukee, WI**

Oncology infusion nurses routinely administer high-risk medications to their patients. While adverse events, like hazardous drug spills and extravasations, do not happen frequently- they carry significant potential to cause harm if mismanaged. Ensuring competence and confidence in managing these potentially perilous events led to the creation of a simulation-based education. The primary purpose of this education was to improve oncology nurse confidence and competence in managing an extravasation. This education also included hazardous drug spill management, which had been done the year prior, but was still a crucial skill to maintain. The simulation scenario was created to allow for two RNs to participate together, allowing each to take the lead in one of the two clinical obstacles. The nurses were first expected to identify when an extravasation had occurred and then had to manage care appropriately. They were

able to experience not only the immediate urgent actions when a drug extravasates, but also coordinate with other disciplines to provide ongoing care and management for these patients. The scenario then transitioned to a new hazardous drug which spilled, requiring the nurses to manage this event as well. A post-simulation evaluation was utilized to measure the effectiveness of this training. Knowledge and confidence in managing a hazardous drug spill was similar to previous years; 25% and 24% respectively. The additional extravasation training component exemplified the importance of this training. Knowledge of extravasation increased 44.9% and confidence in managing extravasations increased 30.7%. Comments from staff were overwhelmingly positive about the experience, though thankful that they did not have to experience a day like that on the unit. A simulation environment is a safe, effective way to practice high-risk, low-volume skills that are highly specific to oncology care. By creating a "worst shift ever" scenario by combining two intimidating events, the value of the education provided had an even greater impact. Other facilities may find it valuable to utilize simulation-based education to increase knowledge and confidence in managing two high-risk, low volume situations: extravasations and hazardous drug spills.

### **031** **PLANNING FOR THE FUTURE OF AMBULATORY NURSING: AN IMMERSION PROGRAM, A PIPELINE TO SUPPORT AND PREPARE NEW GRADUATE NURSES**

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With the future of healthcare shifting to the ambulatory setting, ensuring new graduate nurses are thoroughly prepared is essential. Most students are advised to begin their nursing career on an inpatient unit where any needed resource is easily available. Ambulatory nursing is a key aspect of healthcare where the nurse must be autonomous, have good judgement, and trust their clinical knowledge/skills. Providing an



opportunity for graduating undergraduate students to be immersed in an ambulatory setting assists in determining where the new graduate may prefer to work. In 2019 two advanced practice nurses, in a DNP program, developed an Ambulatory Care Clinical Immersion Course as their project to be implemented at our NCI-Designated, comprehensive cancer center. Oncology nursing leadership was tasked, in partnership with the college of nursing, to ensure this program continued on each semester within the infusion nursing units. To initiate and sustain an ambulatory care clinical immersion program for nursing students in their final semester on an oncology infusion unit. Nursing students were provided the opportunity to apply for this immersion program during their Ambulatory Care course. Once selected, these students were paired up with a preceptor who had attended a preceptor education course. Before starting the two week program, the students were provided with relevant policies and procedures within the organization. The students shadowed their preceptor during all aspects of patient care and were able to see the process of a patient undergoing chemotherapy in the ambulatory setting. To date we have had 13 students go through the immersion program. Unfortunately, due to Covid-19 while the course still continued, we did not have students for the immersion piece in the spring of 2020; the program picked back up again fall 2020. Three students were hired, as new graduate nurses, within our organization. Currently, only experienced nurses are hired into the ambulatory infusion center. Hiring new graduate nurses would be a culture change for all involved and additional support will be needed, not only for these new graduate nurses but also for their preceptors. The nurse residency program, currently in place at our organization, is required for all new graduate nurses. Adding an ambulatory oncology focus to the nurse residency program will ensure these new graduate nurses succeed in the ambulatory setting.

### **032 ANNUAL CHEMOTHERAPY COMPETENCY: THE NEW NORMAL**

**Kelli-Ann Mancini, MSN, RN, OCN<sup>®</sup>, Smilow Cancer Hospital, New Haven, CT; Elizabeth Gineo, MSN, RN, OCN<sup>®</sup>, Smilow Cancer Hospital, New Haven, CT**

Our institution performs chemotherapy/immunotherapy competency verification on an annual basis for nursing via in person simulation of chemotherapy specific skills. In previous years, live simulation was done with our team of nursing professional develop-

ment specialists (NPDS). During the 2020 COVID-19 pandemic, we adjusted the competency to a paper format for social distancing compliance. Feedback around the paper format was mixed, yielding a change for 2021. Utilizing technology to its fullest, we opted to transition the activity to a digital Learning Management System (LMS) platform. The purpose of this project was to implement an electronic process for validating competency of nurses who handle chemotherapy/immunotherapy. The goal is to provide easy accessibility to ensure that nurses have completed the competency requirements within the deadline and provide instant continuing education (CE) credits. The NPDS team met and reviewed feedback from the 2020 competency program to determine the best way to proceed in 2021, providing a high quality experience while maintaining social distancing protocols. Consensus was obtained to proceed with an on demand LMS module. After a careful review of safety events reported along with trends identified by NPDS as a knowledge gap, topics were selected to be the focus of 2021's chemo/immunotherapy competency. Independent verification at the bed/chairside, hazardous drug spills, sexual and reproductive health during treatment, and order set verification were identified as priority topics. Each participant will receive a link to a survey upon completion of the LMS module. Results will be tabulated and reviewed by the NPDS team to compare to previous models of competency assessment. This project was designed using the data collected in during the 2020 assessment to meet the needs created by the changing landscape of the Covid 19 pandemic. The aim is to continue to share and evaluate how we have evolved the delivery of high quality content on an annual basis. The collation of data from this year's competency will be compared with previous years and used to help us grow and develop our annual competency verification program. Using technology to assess annual chemotherapy/immunotherapy competency by building a module within our existing LMS platform. This innovation will allow for easier use for nurses and easier compliance tracking / CE dissemination for NPDS.

### **033 ENHANCING ONCOLOGY KNOWLEDGE—ONE PEARL AT A TIME**

**Jennifer Hadjar, MSN, RN, OCN<sup>®</sup>, Rutgers Cancer Institute of New Jersey, New Brunswick, NJ**

There is a lack of easy access to oncology education. Oncology nursing has a specialized body of knowledge that is robust and comprehensive, and nurses

have critical roles in the delivery of care to a very high-risk population. Nurses are expected to have general knowledge of diseases, treatments, all associated symptoms, side effects, and diagnostics, as well as the critical thinking needed to address emergencies. Nurses need to be committed to life-long learning and professional development and supported by nursing leadership with ample educational opportunities. The purpose of this project was to provide simplified weekly education to my nursing teams based on the ONCC OCN blueprint. This project initially began as supplemental knowledge for nurses as we transformed a medicine unit into an oncology unit. The demand of nurses to expand their oncology knowledge with little time to dedicate to education inspired me to write the “Oncology Pearl of the Week”. The Pearl was a one-page education sheet that was distributed to the nursing team via email, discussed in the huddle, and kept in a binder. I would survey the current patient attributes to drive the initial Pearls. I then performed a gap analysis shadowing nurses and surveyed them to better understand their educational needs. These Pearls became very popular amongst the nurses and it improved engagement. My analysis showed that nurses wanted general education as well as specific aspects of patient care. I began to categorize the Pearls into subjects, including disease, treatments and modalities, symptom management, professional performance, scientific basis, oncologic emergency, supportive medications, survivorship, and miscellaneous. At this time, I also began promoting OCN certification with use of these Pearls. After the first fourteen months the Pearls and promoting certification, around 40% of eligible nurses were preparing to take the OCN exam. Fast forward, I still writing the Pearls weekly. I have recently had the opportunity to share the Pearls with over 250 nurses across our country on the ONS communities page. It is evident that there is a need for simplified oncology education for our nurses. Nursing education can take many different forms, and I think each has its own benefits and limitations. Current acuties demand simplified resources, and the Pearls deliver!

### **034 STANDARDIZING EDUCATION AND COMPETENCY FOR ONCOLOGY NURSES REDUCES ERRORS WITH HIGH-DOSE METHOTREXATE ADMINISTRATION**

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Proper management of patients receiving chemotherapy is a complex aspect of oncology nursing clinical practice. Errors in chemotherapy management have the potential to cause serious toxicities for patients. Specifically, high-dose methotrexate (HDMTX) can cause significant nephrotoxicity if not monitored and administered with appropriate supportive therapies. In 2020, 7 nursing errors surrounding high-dose methotrexate administration were observed, in this cancer center, which triggered a review of our process. The errors centered on, improper parameter management prior to administration of drug, incorrect timing of serum methotrexate levels, and delayed or missing RN interventions related to dosing and administration of leucovorin for cell rescue. The purpose of this project was to develop a standardized education and competency for the nurses administering HDMTX patients. The goal was to reduce errors associated with HDMTX management and to prevent severe toxicities in patients. A nurse-led multidisciplinary team was formed to identify and address errors with HDMTX. Nurses were asked to complete a 5 question knowledge assessment survey. A comprehensive educational plan was developed based on knowledge gaps. The plan included the development of an educational training module, a standard of practice for HDMTX administration, reference tools which included a poster and pocket card outlining the commonly used methotrexate regimens and the supportive therapies. Highlights included parameters to be met for administration, timing of serum levels, and supportive therapies. The training module was presented to the nurses on the only inpatient unit administering HDMTX. A repeat knowledge assessment was conducted 6 months after providing the training and reference tools to the nurses. After 6 months of implementing the comprehensive education program, results of the repeat knowledge assessment showed marked improvement. Additionally, no new nursing errors were reported with HDMTX treatment. A comprehensive education program and standardized approach is effective in reducing nursing errors and improving outcomes for patients receiving HDMTX. Insight from multiple disciplines is key to identifying barriers and providing best practices to reduce errors and improve outcomes for patients.

### **035**

#### **AFTER HOURS TELEPHONE TRIAGE PROGRAM: CONTINUOUS NURSING CARE TO ENHANCE THE PATIENT EXPERIENCE**

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Oncology nurses play a critical role in symptom assessment, management, and care coordination during telephone triage. Clinical efforts to reduce readmission hospital rates among cancer patients were found to include early interventions through telephone triage. After routine business hours, patients are limited to speaking with a hospital operator, on-call doctor, and often referred to a constrained urgent care center. The After-Hours Telephone Triage (AHTT) program, a centralized call system, was created to provide patients telephone triage outside of the clinics routine business hours and weekends. The program allows for a patient to speak directly to an oncology nurse after hours. The program improves continuity of care and improved utilization of hospital resources such as symptom care clinics (SCC), urgent care center (UCC), or local partnership hospitals. With the collaboration of key stakeholders, a process map was developed and executed for the cancer patient journey. IT and telecom capabilities were launched to create a custom call back algorithm and manage call prioritization. A staffing model was created followed by recruitment, onboarding, and training of nurses. Streamlined documentation was created tailored to the telephone triage needs of the cancer patient. Key performance indicators identified were overall utilization, triage disposition, referrals, and calls escalated to the doctor. AHTT receives 1300 calls/week. Common reasons for calls are symptom management, prescription refills, and coordination of care. Eighty-six percent of calls are handled by nurses, 9% of calls nurses consult with on-call doctor, and 5% are transferred to the doctor. Fifty-five percent of the calls are triaged to be non-urgent, 25% urgent, and 4% emergent. Forty-one percent of patients are referred to the UCC, 22% are referred to SCC, and 37% are referred to a local partnership hospital. The AHTT is a nurse driven call center program that provides telephone triage to support cancer patients and mitigate symptom burden from cancer treatments. Nursing tele-

phone triage interventions provided by this program can improve patient outcomes and assist with coordination of care. Collaborating with key stakeholders, utilizing technology platforms, and optimizing staffing volume, the AHTT program serves oncology patients outside of routine business hours. The findings are guiding new educational strategies to optimize nursing practice, future implementation to new services, and innovative workflows to improve patient care and experience.

### **036**

#### **BUILDING AN INNOVATIVE AND INDIVIDUALIZED NEW GRADUATE RN PROGRAM TO BOLSTER OUTPATIENT ONCOLOGY NURSING PRACTICE**

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Due to the shortage of experienced oncology nurse applicants, an urgent need was identified to develop an outpatient oncology new graduate orientation program. Traditionally, our system-wide outpatient oncology areas did not have a formal onboarding program to support and mentor new graduate nurses. The purpose of this project was to attract, support, mentor, and professionally grow new graduate nurses in the outpatient oncology setting. A team consisting of the clinical educator, centralized oncology educator, and Clinical Nurse Specialists conducted a literature review, peer institution benchmarking, utilized lessons learned from a recently implemented hospital-based ambulatory clinic new graduate program, and reviewed existing oncology nurse orientation curriculum. Preceptor training included how to provide constructive feedback, foster critical thinking, use online portal to document and review orientee progress. The team integrated a robust onboarding program to include: general hospital-wide orientation, oncology-specific orientation and clinic staffing rotations, weekly learning objectives, Oncology Pearls content, and weekly review sessions. Week two orientation focused on oncology basics, patient assessment, hands-on skills practice, introduction to rotation sites, and campus tour. Using a microlearning format, content was developed for 30-minute virtual sessions entitled "Oncology Pearls". Topics included

lab review, well-being, extravasation, and genetics & genomics. The 10-week rotations include infusion, port lab, bone marrow transplant, radiation, medical, and surgical oncology clinics across all oncology locations in three cities. At week 10, a matching process occurs and the position becomes permanent. An electronic survey assessed participants' satisfaction and feedback with the oncology-specific week of education. Given the findings, the schedule was modified to start clinic rotations 2 days sooner. The new graduates will complete the Casey Fink survey every three months during their first year. The first cohorts of 10 new graduates remain in outpatient oncology (n=5 infusion center, n=2 radiation oncology, n=1 surgical oncology, n=2 medical oncology/infusion hybrid). The third cohort of new graduates are beginning. Evaluation of retention and program outcomes is ongoing. Onboarding new graduate nurses to outpatient oncology settings challenges the paradigm that new graduate nurses need inpatient experience prior to entering the outpatient setting. Support from preceptors and team members provided essential and necessary mentoring. Ongoing assessment and flexibility was crucial to adapt the success of the program. Additional cohorts are planned for 2022. Successful retention and program outcomes is expected.

### **037 NURSING STUDENTS' PERCEPTIONS TOWARD CARE OF THE DYING INDIVIDUAL WITH CANCER IN AN INAUGURAL ONCOLOGY NURSING ELECTIVE**

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The need for competent oncology nurses is critical in delivering quality care to patients with cancer. The purpose of this project was to develop and implement a 3-credit hour oncology nursing elective for undergraduate nursing students and assess their perceptions and attitudes about caring for individuals with cancer and their families toward dying.

Eighty-two students registered for a summer virtual oncology nursing elective course in a baccalaureate school of nursing; 80 Accelerated BSN and 2 BSN. Eighty percent were between 18-30 years of age. Of the 82, 4 were Black/African American, 7 Asian/Pacific Islander, 1 multiracial, and 5 Hispanic/Latinx. Thirty-seven (45%) desired to work in pediatric oncology and adult oncology. Course content included cancer epidemiology, global cancer care, cancer prevention, treatment modalities, palliative and supportive care, cancer care across the lifespan, psychosocial and caregiver support, survivorship, inclusive cancer care, ethical, legal, and professional issues. This course also included professional development presentations from leaders of ONS, HPNA, and APHON and students were offered free membership and HPNA. Students were provided in class time to complete surveys including the Frommlett Attitude Toward Care of the Dying at 3 time points: T1, first day of class (n=82), T2, mid-semester (n=48), and T3, last day of class (n=40), but not all students completed the surveys. The study was reviewed by the Office of Human Research Ethics and determined it was not human subjects research and exempt in May 2021. More than half of the students had experience caring for someone with cancer prior to enrolling this course. The mean score of the Frommlett Attitude Toward Care of the Dying Scale increased during the course; scores range from 30-150 with higher scores indicating a more positive attitude toward care of the dying patient. The lowest scoring Frommlett questions were "I would not want to be assigned for a dying person" and "As a patient nears death, the nurse should withdraw from their involvement with the patient." This inaugural class faculty received positive feedback from students. Students had better understanding about care of the dying individual with cancer by the end of the course. This course will be offered again to undergraduate nursing students focused on care for individuals and families with cancer during the cancer journey.

### **038 FILLING THE VOID: GENOMICS RESOURCE OVERVIEW**

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Despite ubiquitous applications of genomics across the cancer care continuum, a recent ONS survey showed literacy and knowledge deficits persist amongst oncology nurses. An ONS genomic competency strategic plan was developed to address these deficits and provide terminology updates. The ONS Genomics Advisory Board established three primary workgroups focusing on: Awareness, Knowledge, and Application. These workgroups have produced over 45 oncology nursing-specific genomic resources and engaging educational materials in a variety of formats. The purpose of this project was to provide an overview of the ONS genomic educational resources available through the ONS Genomics and Precision Oncology Learning Library, as well as present analytics pertaining to access of various resources. The foundational resource that was developed was the ONS Genomics Taxonomy which compiled established peer reviewed definitions in one document and now consists of more than 100 genomic terms. This serves as the accepted nomenclature for all resource development as well as the standard for recommended terminology in all ONS resources, education offerings, and publications. Additional resources include articles in the ONS Voice; podcasts; micro-learnings (*Glad You Asked* videos); single concept learning anchors on biomarker testing and biomarker quick guides; online interactive case studies; and a catalogue of genetic disorder reference sheets. More resources are in development. As evidence for the impact of the Genomics and Precision Oncology Learning Library, unique library pageviews doubled from quarter 1- quarter 2 in 2021 (543 to 1,220). This learning library has the most pageviews of all ONS learning libraries. Among the many resources accessible from the learning library, the top three assets are the Genomics Taxonomy, a *Glad You Asked* video and a VOICE article on somatic and germline variants. Of the top 25 video webpages on ONS, 36% (N=9) are genomics-related videos and the *Is a Variant the Same as a Mutation* video has the most pageviews (3796). These analytics demonstrate that ONS members are accessing the genomics educational resources. The Genomics Advisory Board is continuing to develop educational materials and promote engagement with the Genomics and Precision Oncology Learning Library. Oncology nurses can use these genomic resources for self-education or for teaching others through unit-based continuing education, just-in-time learning, chapter education sessions, and/or conference planning.

### 039 NURSE RESILIENCY PROGRAM: CREATING A HEALTHY WORK ENVIRONMENT

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Continuous contact with those suffering, brings risk of compassion fatigue. Oncology nurses have long term relationships with those they care for, and experience continued loss. There is a significant need for emotional intervention and support in the workplace. Approaches that leaders can use to reduce compassion fatigue include resiliency education, self-care activities, reflection and debriefing. When nurses feel supported by their leaders, a healthy work environment is promoted. The purpose of this project was to develop resources for oncology nurses to become aware of their stress and adopt tools to relieve that stress. Six hours of resiliency sessions were developed and implemented. 15 outpatient oncology nurses participated. The sessions were 30 minutes long and were in person; once a month for 12 months. Nurses were taught ways to identify, manage and relieve stress. The sessions included group activities, discussion dyads and breathing techniques. The sessions were facilitated by a nurse leader and a Meditation Specialist. Pre and post surveys were distributed. 3 out of 15 (20%) completed pre surveys and 13 out of 15 (86%) completed post surveys. 11 out of 13 (85%) felt empowered by the program. 12 out of 13 (92%) felt more connected to their team after completing the program. 13 out of 13 (100%) would recommend the program to colleagues. Achievements discussed by participants included, realizing they were not alone and feeling connected and cared for. Challenges expressed were becoming aware of triggers and overcoming embarrassment of trying new techniques. Future requests included more grief strategies and follow up classes to deepen practices. Based on the universal benefits discovered, this program is being expanded. Activities from the program will be presented to a leadership team October 2021. The program be used as a model for all units in 2022. A nurse leader partnered with a Meditation Specialist to develop six hours of sessions that would address the needs of 15 outpatient oncology nurses. Sessions focused on awareness of stress and tools to relieve stress were developed and personalized to meet participants' needs over the course of a one year program.

### 040 UTILIZING SHARED GOVERNANCE TO EMPOWER ONCOLOGY NURSES WITH A



## COMMON MISSION TO IMPROVE PATIENT OUTCOMES

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Trended nursing-sensitive indicator (NSI) data revealed opportunities for improvement. Leadership responded by hosting three Commitment to Excellence Summits where oncology leaders, staff, and advanced practice nurses collaborated to identify barriers to providing exceptional oncology nursing care. Attendees committed to prioritizing patient care and developed role-specific accountability plans. Leading through change is an essential yet challenging task for nursing leaders. Change theories recommend organizations provide the structure, tools, and support to successfully implement and sustain change. The purpose of this project was to provide oncology nurses serving as unit council (UC) chairs with the structure, tools, and support to successfully implement changes necessary to improve patient outcomes. To ensure the focus remained on patient care, our shared governance structure was utilized to provide progress updates. Unit Collaboration Council (UCC) leadership decided members would provide progress reports during monthly meetings. A schedule was developed and clear expectations set. Quality nurses, nurse managers, and clinical nurse specialists ensured UC chairs received unit-specific NSI data and assisted in interpreting the information. Templates were provided for action plans and presentation slides. Members were encouraged to incorporate evidence-based practice (EBP) and innovative interventions into action plans. Members shared progress reports including successes and opportunities with UCC members and meeting guests. Time was provided for comments following each presentation. Feedback was relayed to unit councils for consideration. Providing structure, tools, and support for improving patient outcomes enabled UC chairs to be actively involved in solutions. Oncology nurses interpreted data, developed writing and presentation skills, and successfully led change. The organizational commitment to excellence has led to improvements in central line associated blood stream

infections (CLABSI), catheter associated urinary tract infections (CAUTI), hospital acquired pressure injuries (HAPI), and injury falls. Utilizing a shared governance council structure to drive and support change has led to improved oncology patient outcomes. It is suggested to continue utilizing council meetings as a platform for staff and leaders to collaborate in future oncology practice opportunities and changes. Two months into the unit-based reporting process, the pandemic forced all meetings to be held virtually. Committed to improving patient safety, nurses quickly acquired virtual meeting skills to continue to drive change. Unit-based implementation plans and outcomes were shared virtually via Teams using PowerPoint presentations.

## 041

### A LIFE-SAVING ALLIANCE FOR OUTPATIENT ONCOLOGY: IMPLEMENTATION OF A PARTNERSHIP WITH THE ED AND AMBULATORY ONCOLOGY

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The rapid growth of a 24-hour ambulatory cancer center, which sees over 1,000 patients per day, has increased the risk for medical emergencies as patient acuity and complexity of treatments have increased. Seventy-nine percent of clinical staff expressed not having medical emergency experience in over a year. Between 2019 and 2021, four cardiac arrests with poor outcomes occurred. Review of the current emergency response activation process identified a need for interdepartmental collaboration to improve patient care. This initiative aimed to improve the cancer center's response to medical emergencies. Review of current processes identified a need for collaboration with the ED code team to facilitate efficient transfer of care during medical emergencies. The current process utilized an EMS only response, which was fragmented and inefficient. A multidisciplinary and interdepartmental workgroup was formed to plan the new process, discuss logistics and workflows, and problem-solve challenges. A process map clarified each step of the new practice, and multiple walkthroughs of the cancer center occurred to familiarize the ED staff with the center's layout and to plan response routes. A budget proposal was developed and new equipment was purchased to provide efficient and

effective care, and over one thousand ED and oncology staff were educated and trained. An educational program and partnership were established with the hospital's simulation center to provide unannounced in situ mock codes. Mock codes helped to identify potential inefficiencies in the interdepartmental partnership. The inefficiencies were addressed to ensure an efficient transition of care from the ambulatory setting to the ED. During the mock code, the ED code team arrived from the main hospital within six minutes. Future plans include continuation of mock codes to further improve the process. A cancer center and ED collaboration led to the development of a new process that allows the ED code team to respond to medical emergencies at the cancer center. Equipment was purchased and staff were educated and trained to ensure delivery of the safe, high quality care to patients during code situations. A collaboration with the ED is an innovative approach to improving efficiency of care for patients in life threatening situations. The interdepartmental partnership will improve efficiency and transition of care for patients experiencing medical emergencies.

#### **042 IMPLEMENTATION OF AN OUTPATIENT AUTOLOGOUS STEM CELL TRANSPLANT PROGRAM—A MULTIDISCIPLINARY APPROACH**

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Autologous stem cell transplantation (ASCT) for patients with multiple myeloma is standard treatment and is shown to improve progression-free survival. This treatment has been provided on an inpatient basis from the delivery of the conditioning regimen until engraftment which can keep the patient hospitalized for 14-21 days. Outpatient ASCT has been shown to lower the risk of nosocomial infections, shorten or eliminate hospital stays and elevate patient's reported comfort. Extended hospital admissions increase health care costs and utilize health care resources leading to limited hospital bed availability and longer wait times for patients. The purpose of this project

was to implement an outpatient ASCT program in an effort to lower the risk of nosocomial infections, shorten or eliminate hospital stays, elevate patient's comfort and decrease health care costs utilizing a multidisciplinary approach. An interprofessional team met from across the health system to implement an outpatient ASCT program at the infusion center. The team members included hospital leadership, hematology oncology attending physicians, nursing, pharmacy, blood bank, advance practice providers, transplant coordinator, social work, nutrition, and quality improvement. The team identified the required policies, procedures, education, and training. Our team also focused on the importance of preparing the patient and caregiver to ensure they were able to safely manage their care at home, attend daily appointments, and understand the prophylactic antibiotic regimen. The patient and family were provided a contact list of who to call for any issues. To avoid the potential for a hospital admission secondary to side effects such as neutropenia, mucositis, vomiting and diarrhea, a multidisciplinary workgroup created an outpatient plan to address these issues. Through the diligent work of the interprofessional team from our health system, an outpatient autologous transplant program was created. The first patient has been successfully transplanted without admission to the hospital. The plan is to build on this success and expand the program to more patients who require ASCT. A multidisciplinary approach is required to create the infrastructure, and to provide the necessary staff education for the implementation of an outpatient ASCT. Being affiliated with a large medical center with a current inpatient ASCT program was beneficial in providing staff with hands-on learning for completion of clinical competencies.

#### **043 SUMMER NURSING RESEARCH EDUCATION PROGRAM: SPAWNING INTEREST IN NURSING RESEARCH**

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An ever-growing and diversifying cancer patient population contributes to the complexity of cancer prevention, treatment, and survivorship, placing new demands on the supply and skill sets of professionals in cancer research and oncology. The demand for cancer

researchers will persist as the complexity of disease management changes. There is an increasing demand for nursing scientists to study methods to improve patient experience and outcomes. Less than 1% of nurses have a PhD and when compared with other sciences nurses obtain their PhDs at the average age of 46 (13 years older than other disciplines). Data shows that short-term immersive mentored clinical and research experiences inform decisions by college students to pursue graduate training, seek additional research opportunities, and/or specialize in clinical oncology. The purpose of this program was to orient nursing students into the cancer science career pathway with skills and competencies necessary to meet the emerging interdisciplinary and integrative approaches to research and cancer care. The eight-week program offered a financial subsidy so that students could participate full time in. A primary aim was to integrate core research experiences with supporting co-curriculum of professional development and didactic activities alongside an interdisciplinary group of students at different stages of education. The goals of the research student experience were to explore the role of nursing research in the advancement of cancer science, its integration into operations, the roles of interdisciplinary care in collaborating on research, and the functions of a comprehensive cancer center. A competitive application process was utilized to select rising senior undergraduate nursing students to participate in the eight-week research experience. Participants were mentored by a nursing scientist on all components of the research process (from concept to dissemination) and presented a culminating capstone of their work. Post-assessment data demonstrated satisfaction with the program and increases in self-efficacy and knowledge surrounding oncology nursing research.

#### **044 DEVELOPMENT AND IMPLEMENTATION OF A VIRTUAL BLOOD AND MARROW TRANSPLANT (BMT) PATIENT EDUCATION PROGRAM DURING THE COVID-19 PANDEMIC**

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Blood and marrow transplant (BMT) is an intensive treatment that requires patients and their caregivers to fully understand the BMT treatment process. At this NCI designated Comprehensive Cancer Center, patients and their caregivers receive BMT education at multiple intervals prior to and during their trans-

plant. Before the COVID-19 pandemic, they received in-person education through an introduction to BMT class and a personalized patient-caregiver teaching session. When social distancing measures were put into place and visitors were restricted for COVID-19 prevention, teaching was limited to patients only. In order to continue patient and caregiver education during the pandemic and limit potential COVID-19 exposures, a virtual patient education program was developed and implemented in August 2020. Over 500 patients and caregivers have participated in this virtual education. Video conferencing links were created and sent via the electronic medical record to patients. The virtual teaching sessions are facilitated by experienced BMT nurses. A telehealth services acknowledgement statement is made and patients/caregivers verbally agreed. The nurses were on camera and shared screens of an educational slide presentation and other related materials. The switch to virtual patient education has decreased the number of in-person visits, thus potentially decreasing the risk of COVID-19 exposure. Greater flexibility in scheduling dates and times of these virtual sessions has been attained. Virtual personalized teaching appointments were scheduled later in the clinic day since they don't need to be consolidated with other pre-BMT evaluation appointments. Staggering virtual personalized teaching appointments has also allowed more patients/teaching sessions per week, from seven to ten sessions. Patients and caregivers expressed appreciation for not needing to come to the hospital for an extra appointment, saving gas, parking fees etc. and the ability to participate in the comfort of their own homes. It has also allowed greater participation from multiple caregivers since the number of participants is not restricted and clinic space is not a factor with virtual teaching. Because of these benefits, the BMT patient education program will remain a virtual format. Furthermore, the success of this program has led to the adoption of virtual education for the BMT discharge class and chimeric antigen receptor (CAR) T-cell education. A future project will be to determine how well this virtual patient education program meets patients and caregivers' educational needs.

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#### **QUALITY IMPROVEMENT**

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#### **045 IT TAKES A VILLAGE: A TEAM-FOCUSED APPROACH TO FALL PREVENTION**

## **ON THE INPATIENT ONCOLOGY SERVICE**

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Falls are one of the most common adverse events that occur to hospitalized patients. Oncology patients, in particular, have a 50% higher chance for falls in the inpatient hospital setting than non-oncology hospitalized patients. Because of sequelae related to their underlying disease, such as pancytopenia, bony metastases, and side effects from chemotherapy, they are also at risk for serious injuries as a result of those falls. In 2020, there were 67 falls on the inpatient oncology units at New York Presbyterian: Weill-Cornell. In 2021, there have been 51 falls (39 unassisted) to date. The purpose of this project was to reduce total number of falls on the inpatient oncology service line (10 North, 10 Central, 10 South, and 10 West) by 15%. Nursing leadership coordinated bi-weekly interdisciplinary fall meetings, during which we discussed practice, gaps, and trends. Led by the medical director of quality and patient safety, the following teams participated: nursing, leadership, medical providers, nursing support staff, quality, nutrition, and environmental services. Two units (10 South and 10 Central) completed fall rapid-cycle peer validation audits, which included proactive rounding practice, documentation, education, and provider-led patient education. Additionally, each unit's fall champions and nurse leaders audited Fall TIPS (tailored interventions for patient safety) compliance, providing feedback to staff in real time. 2 main areas of opportunity were identified as a result of these audits—education delivery and consistent use of fall TIPS. In addition, nursing adopted a collaborative interdisciplinary approach to implementing these interventions. Nursing spearheaded education for the providers, environmental services, nursing support staff, and nutrition, educating >80% of staff. Leadership rounds (at least 40 per month) focused on fall prevention and responsiveness. During the education period, all units implemented standardized door signage, highlighting the patient's risk level based on the Morse score. Adopting an interdisciplinary team approach to fall prevention resulted in an 85% decrease in falls in 2021 YTD. Total falls peaked in January 2021 (13 falls) and has been trending down. Involving all members of the oncology patient care team and implementing sustainable measures is essential to ensuring patient safety. Continued auditing and education will ensure a decrease in falls, striving towards the organization's goal of zero harm.

## **046 PUMP INTEROPERABILITY IMPLEMENTATION IN THE OUTPATIENT INFUSION SETTING**

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A large academic medical center with thirteen outpatient infusion sites administers an average of 2,000 infusion medications per day across its different locations. High risk medications such as antineoplastic drugs, immunotherapy, and biologics compose the majority of treatments given in these ambulatory sites. It is a widely recognized fact that intravenous medication administration errors are still quite common despite robust institutional policies for independent medication checks, and the stand-alone use of barcode medication administration technology and smart infusion pumps. Current processes are vulnerable because of nursing workarounds that are able to bypass safety checks and the absence of automation in infusion pump programming. To decrease process vulnerabilities and increase patient safety in medication administration, pump interoperability was implemented in the health system as a new standard of care for infusion therapy that integrates closed loop communication between physician orders in the electronic health record, barcode medication administration, and smart infusion pumps. This bi-directional feedback mechanism verifies the order against the drug and automatically programs the smart pump with the ordered infusion rate. This innovation eliminates manual programming errors, encourages bar code medication administration compliance, and increases documentation accuracy. A robust implementation strategy was developed and thoughtfully executed in the outpatient infusion sites in the midst of the COVID19 pandemic. Specific testing and nursing education efforts targeting ambulatory workflows were developed which resulted in high compliance rates of 86%, three months after implementation (November 2020). Currently pump interoperability compliance is at 90%. The outpatient infusion department also saw decreases in workarounds, increases in patient ID band and medication scanning compliance, increases in smart pump drug library guardrail usage, and more accurate billing charge capture.

## **047 WHERE'S THE BEEP? INVESTIGATING HOME INFUSION PUMP MALFUNCTIONS TO PREVENT DISRUPTIONS IN PATIENT CARE**

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Northwest, Seattle, WA; Caitlin Mills, BSN, RN, OCN®, Seattle Cancer Care Alliance at University of Washington Medical Center–Northwest, Seattle, WA

In outpatient oncology clinics, external vendors often provide and maintain infusion pumps for patients who require home chemotherapy infusions. Disruptions caused by pump malfunctions may result in: patients reporting to an Emergency Department after hours, chemotherapy cassettes having to be urgently remade and replaced, incomplete therapy, and increased patient distress. At a satellite clinic of an NCI-designated comprehensive cancer center in the Northwest, an increase in the number of unexpected alarms was noted by nursing in June 2021. The purpose of this project was to identify the source of an increase in unexpected pump alarms and develop a corrective action plan to prevent disruptions in care and increase patient safety. A Root Cause Analysis (RCA) was completed with frontline nursing, nursing leadership, quality program manager and external pump vendor. A review of organizational incident reports was also completed to assess the breadth of the problem across the entire organization. During the RCA, the frequency of pump alarms at the satellite clinic was determined using nurse-reported events from an incident reporting database. Incidence increased from zero reports before May 2021 to a total of 19 pump alarms between June and August 2021. Findings were presented to a multidisciplinary system-wide committee, resulting in other clinical sites reporting the same issue with unexpected alarms. Data was then compiled system-wide using the same method of analyzing incident reports. Analysis showed that all sites had reported an increase in alarms, dating back to April 2021. As a result of the RCA, the external vendor shared the etiology of increased incidence of alarms was the infusion cassette. An action plan was formulated with RCA participants. The vendor's nurse educator developed education for patients and staff regarding management of alarms. Since the issue is system-wide, the project was presented at a multi-site infusion nursing practice committee and the decision was made to form a workgroup due to the implications to both patients and staff. The workgroup was tasked to investigate the feasibility of changing home infusion pumps or evaluating other external vendors. Based on decisions from the workgroup, patient and staff education will be developed for approval and implementation. After implementation, continued comprehensive analysis across multiple sites provides the best data for improving oncology care outcomes.

## 048 CLOSING EDUCATION GAPS IN THE HEAD AND NECK CANCER POPULATION

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Patients with Head and Neck Cancers (HNC) are a diverse group with complex educational and support needs. Literature suggests HNC patients often experience fragmented care. These patients would therefore benefit from standardized education to address disease-specific stressors including treatments, symptoms, speaking and swallowing difficulties, and nutrition which can affect quality of life. Treatments are often multidisciplinary and multimodal, adding to the potential for inconsistent education, misunderstanding of the education leading to confusion, and missed information. Given these complexities, literature suggests the majority of HNC patients prefer written information about their diagnosis and treatment. The HonorHealth Oncology Navigation (HON) team identified an education gap for this patient population. The HON team and our Oncology Certified Registered Dietician developed an evidence-based Head and Neck Cancer Education Guide. The development of standardized, comprehensive, and understandable written information removes potential barriers of inconsistent education or misunderstanding leading to patient confusion. The receipt of written information encourages patients to actively participate in their care. Across many studies, patients requested education and support for managing treatment-related side effects, maintaining health during treatment, and achieving a healthy lifestyle after treatment. The Head and Neck Cancer Education Guide focuses on disease-specific topics including treatment side effects management, nutrition goals and recipes, feeding tube guidelines, and survivorship recommendations. Written information reinforces verbal education provided during one-on-one consults. It also improves understanding and recall. The Oncology Nurse Navigation (ONN) team implemented a workflow to provide individualized educational counseling and standardized written information to newly diagnosed HNC patients with the goal of increasing the rate of ONN consults by 20%. Baseline data was collected between November 2019 and February 2020 for a subset of newly diagnosed HNC patients. Between March and May 2020, the HON team and



Registered Dietician developed the educational guide and prioritized ONN consults for newly diagnosed patients. The post-intervention data was collected between June and October 2020. At baseline, 60% of HNC patients met with an ONN to review diagnosis, treatment, potential side effects, and nutritional support. Post-intervention, the rate was 100%. The HON team identified and closed education gaps for HNC patients. These efforts aligned evidence-based recommendations with internal processes which can improve patient care.

#### **049 E-CIGARETTES AND MIDDLE SCHOOL EDUCATION: A LOCAL ONCOLOGY NURSING SOCIETY CHAPTER INITIATIVE**

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E-cigarette use is highest among U.S. teens and adding another generation addicted to nicotine. In January 2019, a local chapter Oncology Nursing Society (ONS) member inspired the chapter to seek out an opportunity to affect the use of e-cigarettes in the youth of our community. In partnership with ONS and our local public school systems, our local ONS chapter outreach program aimed to provide evidence-based, age-appropriate education to middle school students on the dangers of e-cigarette use. Local ONS chapter board of directors (BOD) reached out to the ONS education department to collaborate in developing appropriate content to share with the audience. Local ONS chapter BOD contacted the public school system director of athletics and health & physical education. After approval from the local school system, contact was made with the physical education and health teachers in each of the 11 public middle schools. With the support of ONS, it was decided to use the age-appropriate presentation developed by the CDC to provide information consistent with the tools already used by the school system. A short anonymous pre-post survey was developed and approved by the school system director. Between February 2020-May 2021, 33 classes were taught either in-person or virtually at five schools by seven local ONS chapter members. Pre surveys indicated that many students had some knowledge about e-cigarettes. Our post survey confirmed knowledge and assessed the impact of the presentation on tendency to try or continue vaping. Our participating chapter members found the oppor-

tunity very rewarding and continued with the project through the height of the pandemic. Teachers felt supported through collaboration with a respected health-care provider. We will share outcomes from our surveys in our presentation. Community outreach is one of the hallmarks of our ONS mission. Through collaboration with national ONS and the public school community, our local chapter supported the ONS position statement: to seek to reduce the risk, incidence and burden of cancer by encouraging healthy lifestyles. Although we were challenged by the pandemic, our members persevered with our local schoolteachers to provide education virtually. This pilot demonstrates the feasibility for chapters to partner with ONS and their local community for meaningful outreach.

#### **050 CREATION OF AN AMBULATORY PORT TASK FORCE TO ADDRESS MEDIPORT INFECTIONS**

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A recent uptick in mediport infections at Karmanos Cancer Institute (KCI), provided an opportunity to review standards and procedures related to mediports. A systematic review of current process can be used to attempt to identify deviations from standards. Since most mediports are accessed and maintained in the ambulatory settings, this area was the focus of the review. Standardized care and messaging from initiation of care and throughout the care continuum can be an impactful way to provide quality and safe patient care. The purpose was to assemble a task force of key stakeholders to systematically review and create a standardized process for mediport care with the goal of decreasing infections. A task force of key stakeholders reviewed the process of patients who had a mediport placed at KCI through continued care and maintenance. The process review began with the education patients received about CHG bathing prior to placement and continued through general mediport care. Real-time observations were completed for mediport placements in interventional radiology as well as in all areas at KCI where mediports are accessed and maintained. Gaps were identified in education prior to port placement and lack of standardization of care and maintenance. The task force created a plan for education, a standard script for patient education and documentation, and audits for these identified gaps. Education of the standardized process including patient education prior to placement and central line care bundle was provided to all ambulatory nurses.

Since implementation of the ambulatory port task force, the number of port infections in the ambulatory setting have decreased. For 2020 overall, 33 port infections were identified in the ambulatory setting. Since implementation of the education and central line care bundle, there have been 12 mediport infections identified as of August 2021. A systematic review of current process from start to finish as well as standardization of care with clear expectations of all areas can decrease infection rates. By forming a task force of key stakeholders and reviewing current process from start to finish, the opportunity is present to reinforce standards of care or enhance current policies with the goal of preventing infections.

### **051 IMPLEMENTATION OF A NURSE DRIVEN MOBILITY PROGRAM: PREVENTING FALLS AND FUNCTIONAL DECLINE IN ONCOLOGY**

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A lack of an evidence-based mobility program on an acute tertiary care adult oncology unit was identified at an 850 + bed academic medical center. To address the gap in practice, a quality improvement (QI) project was piloted on one 40 bed unit made up of patients with diverse oncology and hematology diagnoses. The project aimed to determine if, in an adult oncology population with high fall rates, would the nursing implementation of Johns Hopkins Activity and Mobility Promotion (JH-AMP), when compared to current practice, affect fall rates and the team's attitudes, beliefs, and behaviors related to promoting activity and mobility interventions. Intervention implementation utilized a 4 stage, Plan Do Study Act approach, and the entire JH-AMP toolkit (free access) was utilized throughout the stages. The entire project was designed to include measurement of the care team's attitudes, beliefs, and behaviors around mobility pre- and post-project implementation, educating the care team on using new JH-AMP activity and mobility capacity assessment goal-setting tools, implementation of the JH-AMP program tools, and monitoring of compliance surrounding AM-PAC assessment, JH-HLM goal setting, completion of goals. Morning and evening shift change safety huddles were used to ensure the entire bedside team was involved in the processes, had opportunities to communicate praises and concerns, and were included in decision making. The implementation of JH-AMP proved to be clinically significant. Findings included a reduction in fall rates

when compared to falls rates for the same quarter one year prior, as well as identification of a learning gap related to the utilization of available mobility safety equipment, and statistically significant improvement in mobility behaviors. Opportunities for cost savings were recognized through a decrease in falls and falls with injury resulting in unreimbursed costs related to increased length of stays and care to treat injuries sustained due to falls. The results demonstrate the value of implementing the JH-AMP program into oncology nursing practice and leveraging an evidence-based program to augment current fall prevention practices improving patient care, patient outcomes, and preventing a functional decline in the oncology acute care population.

### **052 IMPROVING WAIT TIMES IN AN INFUSION CENTER FOR HEAD AND NECK CANCER PATIENTS**

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Head and neck cancer accounts for only 4% of all cancers in the United States, but utilizes a significant amount of health care costs and resources due to prevalent treatment side effects and complications from the cancer itself. Most patient appointments are scheduled with protracted wait times due to the lengthy process of same-day labs, provider evaluations, chemotherapy, and radiation. The wait time for patients at one East Coast infusion center is one of the six lowest Press Ganey Hospital Consumer Assessment of Healthcare Providers and Systems survey scores. To improve this metric, a quality improvement project was conducted to reduce infusion center wait times for head and neck cancer patients undergoing concurrent chemoradiation by 50%. A multidisciplinary team approach including brainstorming sessions, fishbone diagrams, chart audits, time studies, process mapping, and run chart monitoring was used to identify factors contributing to delays and to strategize an intervention that would best meet the needs of the patient. The Oncology Nursing Society/American Society of Clinical Oncology 2016 Chemotherapy Administration Safety Standards served as the evidence source for the work-flow practice change. Interventions included advance appointments for lab work and provider visits, chemotherapy order

review expert nurses and pharmacist verification of labs and orders, communication with patients using a prechemotherapy symptom checklist, and advance chemotherapy preparation. The measured outcome was time from patient check-in to initiation of chemotherapy. Preliminary results show that the mean time from check-in to initiation of chemotherapy decreased from 3 hours 36 minutes (n=14) to 1 hour 50 minutes (n=12), a 49.2% reduction. Quality improvement implementation was initiated on September 13, 2021, and data will be collected through December 3, 2021. Initial challenges included premedication errors for patients with dysphagia and lack of available infusion chairs at patient's arrival. The implications of this study are improved quality of life for head and neck cancer patients by reducing anxiety and emotional distress associated with long wait times, and increased patient and staff satisfaction. This work is consistent with previous research that showed reduced wait times from scheduling provider visits and laboratory evaluation prior to the treatment date. Additionally, this project demonstrated improved communication between staff and patients with an emphasis on chemotherapy safety and decreased drug wastage.

### **053 REDUCING CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS (CLABSIS) THROUGH STANDARDIZING CENTRAL VENOUS CATHETER (CVC) BLOOD DRAWS AND CHLORHEXIDINE GLUCONATE (CHG) TREATMENT USAGE**

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Hematopoietic Stem Cell Transplant (HSCT) patients are susceptible to CLABSI due to long-term central line placement and usage, high dose chemotherapy, prolonged immunosuppression, and post-transplant complications such as graft-versus-host disease. CLABSIs are, however, preventable through proper insertion techniques and management of the central line (National Healthcare Safety Network, 2021). In 2020, the inpatient HSCT unit had 0.51 CLABSIs per 1000 central line days. As of the second quarter of 2021, there were 2.82 CLABSIs per 1000 central line days. After each CLABSI event, an interdisciplinary, thorough root-cause analysis was completed, finding

no attributing factors to each CLABSI event. Focus shifted to nursing practice as a probable cause for the increase in CLABSIs in 2021. The purpose of this project was to reduce CLABSI incidence by 20% within 3 months of implementation of peer-to-peer validation of central line management practices on the 16 bed, inpatient HSCT unit. HSCT nurses collaborated with nursing leadership to develop a standardized validation competency tool based on current hospital policies. 100% of HSCT nurses were validated on central line management practices including CHG treatment process and obtaining blood cultures and other blood specimens. To ensure consistency of validation, three designated and trained nurses completed all competencies. After successful completion of peer-to-peer validation, 35% of nurses did not obtain blood cultures and blood draws from central lines according to hospital policy. 66% of nurses did not know how to perform CHG treatments correctly. For the nurses who had opportunities for improvement, feedback was provided in real time. To evaluate the effectiveness of the interventions, we examined CLABSI data in 2021 prior to the validation period. In the pre-intervention period from January to May 2021, the HSCT unit had 6 CLABSI events, 2.82 per 1000 central line days. In the immediate post-intervention period from June to August, there were 1 CLABSI event, 0.90 CLABSIs per 1000 central line days. This is a 68% decrease of CLABSI within three months of the intervention. Oncology nurses play a pivotal role in preventing CLABSI in the vulnerable HSCT population. Validating central line management and CHG wipe usage is an essential way to ensure proper central line practices and reduce CLABSI. Peer-to-Peer observation and feedback on central line management periodically helps strengthen nursing skills on central line care.

### **054 IMPROVING PATIENT SAFETY THROUGH UTILIZING APPROPRIATE INTRAVENOUS SITE**

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Patients at the cancer center often have same-day restaging scans and chemotherapy treatment, so radiology can leave the peripheral intravenous (PIV) catheter in for convenience with upcoming drug in-

fusion. Due to scheduling availability, patients may arrive at a neighboring affiliated hospital for PIV catheter placement and imaging appointment. We noticed patients from this facility presented to the infusion center with a PIV catheter in the antecubital (AC) fossa despite their request for an alternative intravenous site. The cancer center policies specify a PIV catheter in the AC region is never appropriate for chemotherapy infusion; this is an area of flexion and increases risk for infiltration and extravasation. These patients would undergo another venipuncture for an appropriate venous access for chemotherapy administration at the center. This raises patient discomfort, increases nursing workload, and delays patient care. There were 46 incident reports from January 2019 to March 2021 regarding this issue. This project aims to implement strategies to decrease incidents of patients having a venous access in the AC area when at the neighboring affiliated hospital. We performed interviews with the imaging team and noticed technicians did not check the patient's appointment schedule to identify those with a same-day chemotherapy infusion. We developed a checklist to guide technicians with this identification step. The checklist was distributed to the imaging leadership for staff circulation and display in communal areas and scanning rooms. We performed monthly reviews of incident reports of inappropriate venous access in radiology and noticed a decrease to a total of 9 submissions post-intervention. We ran a control chart with three sigma limits in August 2021 to determine change impact, but we do not currently have enough data to conclude if our goal was met. Additional data collection is still underway to determine impact. Due to the interdisciplinary and sequential nature of oncology care, using a guidance checklist helps smoothen care transition between different departments. However, we noticed imaging technicians' dislike towards the checklist since it adds another step to their current workflow. We are planning another intervention: providing a bright colored card to patients with a follow-up chemotherapy infusion, so imaging staff can identify them and avoid inserting a PIV catheter in the AC region.

## **055 IMMEDIATE HYPERGLYCEMIA MANAGEMENT IN THE ONCOLOGY INFUSION CENTER**

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There is a lack of standardization for immediate hyperglycemia management in patients undergoing ambulatory oncology treatment. Nurses and advanced practice providers (APPs) are uniquely equipped to champion early recognition and evidence-based interdisciplinary management of hyperglycemia in this setting. Current evidence suggests that there is a significant gap between best practice and current practice in hyperglycemia management among both diabetic and nondiabetic oncology patients. Moreover, poor glycemic control is correlated with increased toxicity and worse treatment outcomes, particularly in patients receiving steroids, chemoradiotherapy, immune checkpoint inhibitors, and hormone therapies. The objective of this quality improvement project was to standardize hyperglycemia management in our infusion center with a goal of a 50 percent increase in the number of patients with solid oncology tumors who receive an immediate intervention for blood glucose levels over 250 mg/dL. We hypothesized that beyond this measurable objective, other purposes of this project would include increasing awareness of the negative sequelae of poor hyperglycemia management, streamlining care through standardized triage and documentation guidelines, and reducing unnecessary emergency department admissions. Moreover, this initiative will inform a larger scale project at our institution focusing on the prevention and long-term management of hyperglycemia in this population. Through a 3-month retrospective pre-intervention chart review of 27 patients with solid oncology tumors, who presented to our infusion center with blood glucose levels over 250 mg/dL, we identified that only 26% were receiving some level of immediate hyperglycemia management. Our intervention included the synthesis of current available evidence and expert opinion within our institution to create the attached clinical algorithm and subsequently the deployment of this decision tool and associated EPIC SmartPhrase to assist our infusion center nurses and APPs in improving the standardization of hyperglycemia management, documentation, and escalation of care as needed. Based on our post-intervention 3-month retrospective chart review of 30 patients with solid oncology tumors, 63% received an appropriate intervention for blood glucose levels over 250 mg/dL, which significantly exceeded our goal. We are hopeful that the successful implementation of this evidence-based practice initiative will not only continue

to benefit our institution, but also serve as a framework for other cancer centers who aim to improve patient outcomes through closing the gap between current and best practice in hyperglycemia management.

## **056** **AUDITING: DOES IT INCREASE FALL COMPLIANCE?**

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Research has shown that compliance to universal fall protocols can reduce the incidence of falls for the inpatient population. The oncology population is at an increased risk for falls and falls with injuries, making adherence to fall precautions among this population especially crucial to patient safety. In 2020, there was an increase in patient falls and falls with injury at Karmanos Cancer Institute. This came after implementation of new fall protocols the previous year which resulted in a significant decrease in falls during 2019. The purpose of this project was to determine if auditing the compliance of fall prevention protocols would increase nurse compliance and decrease the number of patient falls. An audit tool which included all portions of the fall prevention protocol was developed to assess staff compliance with the protocol. The tool included use of a fall safety checklist, documentation of fall safety education, the use of a bed alarm, and presence of all fall safety equipment. Audits were performed weekly on acute care units for patients with a Schmid score of 3 or greater. The audits were completed at various times throughout the day to capture compliance among each shift. Registered nurses were notified of noncompliance in real time, at which point appropriate prevention measures were implemented. The audit data was distributed to leadership for review of compliance and to follow up with staff. Fall rates among inpatients at Karmanos continue to fluctuate as well as compliance with the fall protocol. Leadership noticed that consistent completion of audits correlated with increased compliance to fall protocols and increased staff awareness. After initiation of the fall audits staff members have reported increased active awareness of fall prevention protocols. Due to underlying physiological factors the oncology population is at an increased risk for falls which could result in injury. Fall audits can be an effective way to monitor staff compliance and identify areas of opportunity in a unit's fall prevention strategies. Compli-

ance to safety protocols has been shown to increase with regular auditing and feedback.

## **057** **CRITICAL CENSUS: UTILIZING OUTPATIENT RESOURCES TO PREVENT INPATIENT CHEMOTHERAPY DELAYS**

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As hospitals nationwide reach capacity, cancer institutes have been uniquely confronted with the challenge of not having available rooms to admit patients requiring inpatient chemotherapy. This has led to after-hours inpatient chemotherapy admissions, forcing treatment initiations to be delayed until the following day; ultimately causing a domino effect of additional hospital days and units remaining at capacity. At Huntsman Cancer Institute (HCI), a 100 bed NCI Comprehensive Cancer Hospital, we recognized the need to strategically identify solutions to this evolving problem. A well-established chemotherapy committee, with representatives from Inpatient Nursing, Outpatient Nursing, Pharmacy, Informatics, and Nursing Administration; decided to tackle this problem head-on as a multidisciplinary team. With two on-site outpatient infusion rooms at HCI, the possibility of applying a shared approach to inpatient chemotherapy care was explored. The infusion rooms are staffed with Chemotherapy certified RNs, who have the knowledge and skill to provide safe and excellent care to patients while awaiting inpatient room availability. As many of these patients arrived early in the day for clinic appointments, the goal was to use the hours generally spent waiting for an open room more efficiently by initiating treatment in the outpatient setting. First, we needed to ensure orders and documentation were able to transfer across the outpatient and inpatient electronic medical records (EMR), as this has been a persistent limitation of our EMR system. Next, we had to create a process to identify which patients were appropriate for initiating treatment in an outpatient setting and which infusion rooms had the capacity to manage this additional demand. Finally, large scale education was needed to get inpatient and outpatient Charge Nurses, Hospital



Supervisors, Hospital Unit Coordinators, Pharmacists, and Bed Placement Coordinators competent at implementing this process. Ultimately, we have found success in effectively initiating inpatient chemotherapy regimens in the outpatient setting, while patients wait for an inpatient bed to become available. Streamlining this process has enhanced the overall efficiency of inpatient chemotherapy treatment time, improving both patient satisfaction and hospital throughput.

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## RESEARCH

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### 058 DIFFERENCES IN NEUROCOGNITIVE FUNCTION AND QUALITY OF LIFE IN COLORECTAL CANCER PATIENTS AND CONTROLS

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Colorectal cancer (CRC) survivors experience significant long-term physical and mental functional changes. Neurocognitive impairments have been reported in patients prior to and after CRC treatment compared to healthy controls (HC). This feasibility, descriptive study investigated neurocognitive function and Quality of Life (QOL) at baseline (T<sub>1</sub>), 12 weeks (T<sub>2</sub>), and 24 weeks (T<sub>3</sub>) in CRC and HCs. Hypotheses: QOL would be lower in CRC patients relative to HC at baseline, declines in QOL would be observed in CRC patients receiving adjuvant chemotherapy (CTX+), and changes in executive function network (EFN)-related activity would be associated with changes in QOL. Chemotherapy-Related Changes in Cognitive Function model guided the study. Screening occurred at surgery and medical oncology clinics at a Midwestern medical center. Participants enrolled 4-6 weeks after surgery (CTX-) or before starting chemotherapy (CTX+). CTX+ participants were age, gender, and education matched to HCs. Of 40 participants, 31 (77.5%) completed at least one post-baseline assessment. Data collection included EFN-related measures, demographics, and QOL mea-

asures [cognition (FACT-*COG*); symptoms (MDASI); and QOL (MOS SF-36v1)]. A variable was created to reflect measurements at the last visit, allowing T<sub>2</sub> data to be used as T<sub>3</sub> data when T<sub>3</sub> data were missing. Spearman correlations were performed between changes in EFN-related and QOL measures. Linear mixed effects models were used in SASv9.4 to report between-group differences and within-group changes. QOL was lower in patients with CRC than HCs at baseline ( $p=0.033$  -  $<0.001$ ) and later measurements. A significant interaction was observed between days since baseline and group on cognition [FACT-CogPCA ( $F(2,75.8)=3.42$ ,  $p=0.038$ )]. Post-hoc analyses revealed significant declines in CogPCA scores in the CTX+ group from baseline to T<sub>2</sub> ( $t(41)=2.43$ ,  $p=0.020$ ) and T<sub>3</sub> ( $t(41)=2.48$ ,  $p=0.017$ ), but not in CTX- or HC groups. Several significant associations were found between changes in EFN-related measures (N<sub>2pc</sub>, P<sub>2</sub>, N<sub>2</sub> amplitudes) with QOL measures (MDASI, FACT-*COG*) between baseline and last visits ( $p<0.01-0.001$ ). As hypothesized, QOL was lower in both CRC groups relative to HCs at baseline, declines in QOL were observed in CTX+ and CTX- patients, and changes in EFN-related activity were associated with changes in QOL from baseline to last visit. Results support growing concerns that CRC survivors may experience decline in neurocognitive function and QOL.

### 059 A HIGHER SYMPTOM BURDEN IS ASSOCIATED WITH DISTINCT STATE ANXIETY PROFILES IN PATIENTS WITH GYNECOLOGIC CANCER RECEIVING CHEMOTHERAPY

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Anxiety is a common symptom in patients with gynecologic cancer. Limited information is available on inter-individual variability in this symptom and its association with common co-occurring symptoms in these patients. The purpose of this project was to identify subgroups of patients with distinct anxiety profiles and assess for differences in demographic and clinical characteristics and severity of co-occurring symptoms

in these subgroups. Patients' level of state anxiety (n = 230) was assessed six times over two cycles of chemotherapy using the State Anxiety Inventory (STAI-S). A STAI-S score of  $\geq 32.2$  is clinically meaningful. Co-occurring symptoms included: depression, sleep disturbance, morning and evening fatigue, decrements in morning and evening energy, cognitive impairment, and pain occurrence, severity, and interference. Latent profile analysis was used to identify subgroups of patients with distinct state anxiety profiles. Differences in demographic and clinical characteristics, as well as symptom severity scores, were assessed using parametric and non-parametric tests. Three distinct state anxiety profiles were identified: Low (55.2%), Moderate (38.3%), and Very High (6.5%). Compared to the Low class, the Very High class was significantly younger; was more likely to report child care responsibilities; had a lower annual household income; had higher comorbidity burden; and was more likely to self-report diagnoses of lung disease, ulcer/stomach disease, depression, and back pain. Differences among the three classes were in the expected pattern for trait and state anxiety, depressive symptoms, sleep disturbance, and cognitive impairment (Low < Moderate < Very High). Compared to the Low class, the other two classes reported higher levels of morning fatigue. Compared to the other two classes, the Very High class reported higher levels of evening fatigue. No differences were found among the classes in evening energy scores. Compared to the Low class, the Very High class reported lower levels of morning energy and higher occurrence rates for both cancer and non-cancer pain. Forty-five percent of patients with gynecologic cancer reported clinically meaningful levels of state anxiety. In addition, these high levels of state anxiety were associated with a higher symptom burden. Clinicians should perform routine assessments of anxiety, as well as assessments of depression, sleep disturbance, fatigue, cognitive impairment, and pain. Interventions that target the underlying mechanisms of these co-occurring symptoms are warranted.

## **060 TREATMENT OF CANCER DISTRESS AND TRAUMA: A QUALITATIVE ANALYSIS**

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Cancer diagnosis and treatment are universally distressing events that may cause or exacerbate

symptoms of post-traumatic stress. Accelerated Resolution Therapy (ART) is a mind-body therapy that has demonstrated success is treating trauma resulting from combat experiences, sexual assault, and complicated grief. ART has not yet been tested in the setting of cancer distress with symptoms of post-traumatic stress. The purpose of this qualitative study was to explore contextual elements of the cancer experience that were consistently distressing and/or psychologically traumatic, as well as perceptions of ART for the treatment of cancer distress. Semi-structured interviews were conducted by phone four weeks following ART, audio-recorded, and transcribed verbatim. Purposive sampling techniques were used, and participants were recruited from a National Cancer Institute (NCI)-designated comprehensive care center. Eligibility included:  $\geq 18$  years old, English speaking, recent or current cancer treatment, a mean score of at least 1.1 on the Cancer and Treatment Distress (CTxD) scale, a minimum score of 3 on the Primary Care-Post Traumatic Stress Disorder (PC-PTSD) scale. Interviews were conducted until data saturation was met. A thematic analysis was conducted using NVIVO 11.0 software. The majority of participants (n=13) were female (84.6%), Caucasian (76.9%), and non-Hispanic (76.9%). The mean age was 55.2 years. The majority had either a stage III (23.8%) or IV (46.2%) solid tumor and had received previous chemotherapy (84.6%). Participants described a variety of traumatic events earlier in life that influenced their cancer experience. For others, the cancer diagnosis was the underlying source of distress. Participants described various ways in which ART helped them process their emotions and restored a sense of calm, inner peace, and better insight and control over their reactions to stressful events. All participants endorsed early incorporation of ART or coping strategies into cancer treatment. Interventions such as ART that can address previous trauma and current distress are needed to address the psychosocial needs of oncology patients. ART may be particularly helpful when individuals enter cancer treatment with unresolved past trauma. Recognition and treatment of emotional distress by members of the oncology team was viewed very positively by participants.

## **061 DIFFERENCES IN BASELINE GENE EXPRESSION OF WOMEN WITH HORMONE RECEPTOR POSITIVE BREAST CANCER AT RISK FOR AROMATASE INHIBITOR**

## ASSOCIATED MUSCULOSKELETAL PAIN DEVELOPMENT

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Chronic musculoskeletal pain (MSKP) is a significant problem in up to 60% of women with hormone receptor-positive early-stage breast cancer (HR+BC) who are prescribed aromatase inhibitors (AI). Up to 30% of these women will discontinue their otherwise successful AI due to the pain. MSKP interferes with functional status, adherence to therapy, and increases utilization of health care resources. Unfortunately, very little is known about the molecular mechanisms underlying MSKP related to AI therapy in women with HR+BC. The purpose of this study was to explore the relationship between pain severity and gene expression in women with HR+BC after surgery, but pre-AI therapy to investigate whether gene expression of specific genes or pathways pre-AI therapy will inform knowledge on MSKP development and severity of pain with therapy. Perceived pain scores were averaged across the four pain severity items of the Brief Pain Inventory (BPI) and then categorized by level of pain severity (none, mild, moderate, severe) for 43 women with HR+BC. Gene expression was

measured via sequencing of RNA extracted from peripheral blood. The R Bioconductor package DESeq2 was used to measure differential expression by use of negative binomial generalized linear models. An expression fold change of  $\pm 1.5$  and a false discovery rate  $p\text{-value} \leq 0.10$  were used to compare gene expression levels in women reporting different levels of pain severity. RNA-sequencing of patient peripheral blood samples demonstrated that there were 896 differentially expressed genes (DEG) between the pain categories, with 413 of these differences occurring between women with moderate vs severe pain. Pathway analysis of the DEGs showed that these genes are active in pathways that regulate transcription of DNA to RNA (e.g., EIF2 Signaling and Estrogen Receptor Signaling) and translation of RNA into protein (Regulation of EIF2 and p70S6k). Differences in severity of perceived pain may be due to DEGs prior to initiation of AI therapy and these DEGs may contribute to the development of MSKP in HR+BC patients prescribed AI therapy. Understanding the biological underpinnings can help develop evidence-based interventions to prevent or reduce the severity of MSKP. These findings may ultimately guide cancer symptom management by using gene expression profiles to identify patients at risk for MSKP who may benefit from preventative measures.