2018 CONGRESS

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Digital Object Identifier: 10.1188/18.ONF.E33

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PHASE ONE CLINICAL TRIALS AND THE ROLE OF ADVANCED PRACTICE PROVIDERS

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Novel drugs are critical for the treatment of oncology patients. In 2016, over 20 FDA approvals were granted for new drugs or new drug indications in Hematology/Oncology. Phase one clinical trials play an essential role in drug development, require meticulous attention to detail, and consistent, real-time adverse event (AE) assessment. The identification of dose limiting toxicities (DLT) leads to determination of the maximum tolerated dose (MTD) and the recommended phase II clinical trial dose. Accurate phase one trial conduct requires well-trained, specialized clinicians. As the Phase One Unit at Winship Cancer Institute of Emory University opened in 2009, the role of the phase one advanced practice provider (APP) was created to facilitate consistent AE assessment, accurate grading of AEs, and identification of DLTs. The role is extremely specialized and includes conducting clinical trial consults to identify possible phase one trial options, performing screening history and physicals to assess trial eligibility, managing AEs carefully, and serving as a consistent resource for research staff and other co-investigators. The phase one APP serves as a co-investigator and collaborates with physicians, the PharmD Phase One Program Director, nurses, and research staff. When a patient is enrolled on a trial, the APP conducts patient assessments at time intervals required by the protocol, reviews laboratory values for clinical significance, and grades the symptoms and lab abnormalities using the National Cancer Institute's Common Terminology of Adverse Events (CTCAE). This grading system standardizes accurate data collection across trial centers worldwide. After grading AE's, the APP collaborates with co-investigators to determine AE attribution, dose modification required, and if a DLT has been identified. Other responsibilities of the phase one APP include ordering screening and restaging scans, interpreting electrocardiograms for clinical significance, performing skin punch biopsies if required by the trial, and working with the research team to answer clinical questions. The APP in the Phase One Unit at Winship Cancer Institute of Emory University plays an essential role in continuity of care with patients on phase I trials, ensuring accurate assessments, symptom grading, clinical decision making in consult with the protocols, and effective, timely communication with the multi-disciplinary team. This care model may benefit other cancer research centers conducting clinical trials.

LEADERS LEADING: PREPARING THE ADVANCED PRACTICE PROVIDER (APP) TO LEAD NEW AND SEASONED APPS

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Nurse practitioners and Physician Assistants are leaders by definition of their education and clinical position. The management team for these advanced practice providers (APPs) has generally not been provided by clinical experts. This allows for a sense that management does not have the knowledge, skill or ability to inspire and challenge APPs, as they do not represent the role of the APP or recognize their scope of practice. When APPs lead APPs, a mutual understanding of skill and development creates a foundation for leadership and professionalism. When the APP manager is new to leadership, seasoned APPs can challenge that authority creating barriers to professional development. Adopting a transformational leadership style that utilizes emotionally intelligent competencies geared towards establishing rapport and buy-in from APP direct reports should facilitate professional development and collaboration based on trust and a shared vision. APP management attended leadership coursework that addressed differences between transformational and transactional style and included concepts related to emotional intelligence. The APP manager as leader was further challenged to go beyond problem solving and organizing, to creating vision, team building, empowering and inspiring. Each APP was met individually by APP management. All were questioned regarding their personal and professional goals. Interest in precepting and mentoring colleagues as well as their plans for further education were also discussed. Expectations of an APP manager were ascertained. A list of themes resulted providing topics for in-services and interventions. Non-career interests and self-promoting behaviors were explored. A needs assessment was created to determine career goals and interests as well as competencies and job satisfaction. These assessments were based on the Oncology Nursing Society's Nurse

Practitioner Competencies and Leadership Competencies. Monthly council meetings were scheduled to provide a forum for collaboration and peer support. The expectation of this quality improvement project was to show both respect and understanding as APPs lead APPs. Both new and seasoned APPs felt that their concerns and interests were evaluated and would consequently be acted upon. By meeting with each APP individually as well as assessing their level of satisfaction, transparent communication was fostered. Both new and seasoned APPs reported satisfaction in having managers be APPs, and acknowledged professional development opportunities and the building of teams.

UTILIZATION OF THE CLINICAL NURSE SPECIALIST IN BONE MARROW TRANSPLANT TO ENGAGE NURSES AND IMPROVE OUTCOMES

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The Clinical Nurse Specialists (CNS) are vital members of the healthcare delivery team. Working with a dedicated nursing leader is essential to advocate for the necessary scarce resources for creating a culture of nursing accountability. The knowledge and expertise is germane to the quality of care patients receive. The dedicated CNS is essential to the impact on staff engagement in programs and professional practice. The CNS influences the professional development of staff and the evidence-based outcomes of care in the Bone Marrow Transplant/Leukemia aggregate. The role of a dedicated CNS collaborating with nursing leadership, brings to the challenge reinforcement through recognition and celebrations of the nurses journey and staffs commitment to complex care. It is essential to implement and maintain measures to reinforce the value of oncology care that align with the Oncology Nursing Society Mission Vision and Values, magnet philosophy and the goal of maintaining nationally certified nurses (75%) of eligible candidates. The CNS creates a culture of life time learning. The BMT/Leukemia nurse's role brings practice challenges requiring nurses with additional skills to manage high levels of stress, diverse family dynamics, acute patient care needs, and end of life care. An individual educational plan is created for each nurse that spans 2.5 years, concluding with sitting for the Bone Marrow Transplant or Oncology Certified Nurse examination. We maintain zero vacancy rates and a turn-over rate of less than 3%. Staff retention exceeds both institutional and national standards which leads to fostering a community and provides staff satisfaction. Our team maintains a 75% rate of certification, 40% rate of dual certification, a 75% rate of bachelor's prepared nurses. Patient satisfaction scores that exceed the institutional targeted expectations. Hospital Acquired Infections are monitored and evidence based practice changes are initiated according to outcomes. The CNS integrates practice competencies through the nursing practice sphere of influence by designing, developing, implementing, and evaluating innovative and comprehensive programs to achieve cost-effective and nurse-sensitive outcomes. Innovation Implementation strategies that use the advancements in technology, continues to evolve and is key to connecting with generation and practice demands.

UTILIZING THE FULL SCOPE OF THE CONSENSUS MODEL OF APRN REGULATION IN THE DEVELOPMENT OF BSN TO DNP ONCOLOGY SPECIALIZATION CURRICULUM

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The cancer care system is in crisis and unable to meet the demands of the cancer patient population. An aging population, increases in cancer cases, greater complexities in cancer care, and projected physician and nursing shortages, forecasts a growing need for more cancer care providers. A dearth of academic institutions offering formal graduate oncology nursing education guarantees that workforce demands for specialty preparation in oncology nursing are not being met in graduate programs. Additionally, advanced practice nursing preparation is moving to the DNP level, however there is still a shortage of educational programs that offer competency in the specialty of oncology. Considerable variability exists in the interpretation of the Essentials of Doctoral Education for Advanced Nursing Practice (curricular elements that must be present in Doctor of Nursing Practice (DNP) programs for accreditation by the Commission on Collegiate Nursing Education) by schools of nursing. Specialization prepares APRNs to address in depth the needs of specific populations within the APRNs' established population focus. Specialty education requires a focus on practice that goes beyond the role and population focus. Additionally, the DNP Essentials require preparation in leadership and change. In this presentation, the Consensus Model of APRN Regulation: Licensure, Accreditation, Certification, and Education (LACE) is discussed as a framework used in the development of a new BSN to DNP program to prepare APRNs with specialization for oncology practice. The complexities of cancer care demand a rigorous academic preparation that includes specialty preparation. Many academic institutions that have replaced the MSN with the DNP degree for advanced practice preparation have not fully adopted the Consensus Model and do not address or include specialization beyond the population. This does not serve the patient populations that need specialized knowledge for quality care. Learner Objectives: 1. Distinguish 'specialization' as a unique level of APRN preparation requiring a specific curricular approach. 2. Consider the utility of the APRN Consensus Model in guiding BSN to DNP APRN curriculum development.

A CLINICAL NURSE SPECIALIST (CNS)-LED SMOKING CESSATION PROGRAM

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Smoking remains the world's most preventable cause of death. Continuing to smoke during cancer treatment can compromise the effectiveness of the treatment outcomes. However, little time is spent, if any at all, on helping patients quit and providing the behavioral support needed to be successful. The purpose was to develop and implement an evidence-based smoking cessation program that meets patient needs. The three key program components are: 1) tobacco treatment specialist training, 2) evidence-based patient educational materials, 3) patient consultation and follow-up. The clinical nurse specialist (CNS) took an intensive 5-day course learning about FDA-approved medications integrated with behavioral therapy, passed an examination, and logged 240 patient-hours to become certified. The program is available to any patient with cancer via self and provider/nurse referrals. The CNS meets/calls the patient to discuss the optimal plan for the patient based on their smoking history, previous quit attempts and the Fagerstrom nicotine dependence test. The plan is then reviewed with the physician or advanced practice provider for adjustments and prescriptions. After the initial patient encounter, they receive a call two weeks later then are followed monthly until they have successfully quit for three months. In its third year, the program has seen an increase in referrals. Referrals have predominantly been those diagnosed with lung cancer and have come from the weekly multidisciplinary thoracic oncology clinic, lung cancer screening program, or self-referrals. This intervention has provided equivocal quit rates to benchmarked national rates. With consistent patient contact, using both behavioral and pharmacotherapy, it is hoped that quit rates will increase towards 50%. The successful implementation of this program has met the needs of many patients that may have never quit smoking. The services have been well received by patients and providers as the program comprehensively tackles a previously unaddressed issue. Lessons learned have centered on medication reimbursement and self-pay costs when private/public insurers won't cover the cost.

ADVANCED PRACTICE PROVIDERS (APP) CHEMO/BIOTHERAPY ORDER WRITING: MOVING TOWARD STANDARD COMPETENCY AND PRACTICE

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The rising incidence of cancer combined with an aging population has increased the demand for the oncology workforce. The role of advanced practice providers is expanding to meet this need in providing cancer care. One of the most critical responsibilities for all front line clinicians is providing safe, accessible chemo/biotherapy to those affected by cancer. In our survey of current practice, 28% of institutions allowed APPs to order chemotherapy without an attending co-signature following predetermined practice parameters. ONS surveyed advanced practice nurses in 2015 (unpublished data) to assess independent chemotherapy ordering. This survey revealed 20–33% of respondents independently prescribed after completing a didactic and competency based assessment within specific parameters. After reviewing organizational practices, we found no standardized processes for onboarding new APPs to writing chemotherapy. We sought to identify a process for evaluating and maintaining competency for our APPs. An interdisciplinary team was formed. Our approach was three fold: First, we sought to evaluate current practice by undertaking surveys both from health care institutions (United Hospital Consortium N=37) and current practitioners (ONS APP survey, N=325). Second, we evaluated the paths of entry into practice for our APPs and identified three distinct pathways. Finally, we developed a plan to implement this practice change beginning with presenting a new policy before the Medical Board establishing privileges for APPs to write chemotherapy orders based on strict guidelines and a clear process for evaluating competency, including a defined practicum. Based on self-assessment test, oncology experience and graduate educational track, each APP applying for chemotherapy writing privileges receives an individualized didactic education plan, including sub specialty education content. Additionally, the APP serves a clinical practicum with supervising MD to sign off on skills. Evaluation of APP chemotherapy writing incorporates patient safety metrics, nursing satisfaction, clinician satisfaction and operational efficiency. APPs have an integral role in providing care to oncology patients across the disease trajectory and in many diverse health care settings. There is a growing need for the role of APPs to practice at their full scope of licensure and education in order to meet the demands for safe, competent, compassionate cancer care. We will present our institutions experience in creating a standardized process for this privilege with our focus on safety and quality care.

ASSESSMENT OF REFERRAL PATTERNS IN AN ADVANCED PRACTICE PROVIDER LED SURVIVORSHIP CLINIC TO ADDRESS UNMET NEEDS OF CANCER SURVIVORS

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Since publication of *From Cancer Patient to Cancer Survivor: Lost in Transition*, there have been expanded efforts to address cancer survivors' needs by providing a Treatment Summary and Survivorship Care Plan (TS/SCP) and increasing distress screening. However, survivors continue to report unmet needs throughout the cancer continuum, which may diminish their quality of life. An advanced practice provider (APP) led multidisciplinary Cancer Support clinic was designed to address the unmet needs of cancer survivors. Survivors are referred by their oncologists to (1) receive a TS/SCP or (2) a holistic supportive care assessment (SCA), triggered by elevated distress scores. The clinic APPs address survivors' unmet needs through the tenets of survivorship care (prevention, surveillance, intervention and coordination). Interventions may include internal referrals to services for psychosocial oncology and spiritual care (counseling, expressive arts, and chaplaincy), oncology rehabilitation (physical, occupational, and massage therapy and physical medicine & rehabilitation), or ancillary referrals to nutrition, case management or a primary care provider. The purpose was to describe referral patterns in a Cancer Support clinic and identify unmet needs of survivors. A 3 month retrospective chart review (n=198) evaluated and described referral patterns by visit type: TS/SCP (n=104) and SCA (n=94). The majority of survivors were female (TS/SCP = 95%; SCA = 69%) and 50 to 69 years of age (TS/SCP = 63%; SCA = 54%). Breast cancer was the most common diagnosis, but was notably higher in the TS/SCP group (89%) than the SCA visit type (36%). The TS/SCP group had 142 referrals, averaging 1.45 referrals per survivor to oncology rehabilitation (68%), ancillary services (23%), and psychosocial (11%). In comparison, the SCA group had 201 referrals, averaging 2.18 referrals per survivor to oncology rehabilitation (58%), psychosocial (28%), and ancillary services (13%). Both groups identified unmet needs of survivors, but the SCA visits generated more referrals, especially to psychosocial oncology. This finding was expected, as the SCA group was referred to the Cancer Support clinic from a positive distress screen. Cancer survivors present with many unmet needs throughout the cancer continuum. With the number of survivors increasing, it is imperative for APPs to screen, intervene, and coordinate care for the needs of all survivors to improve their well-being and quality of life.

THE EVOLUTION OF ADVANCED PRACTICE PROVIDER (APP) DRIVEN ONCOLOGY URGENT CARE IN A LARGE ACADEMIC MEDICAL CENTER

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In 2014, we analyzed ED utilization and hospital admissions in a 5-month period (1/1/2014–5/31/2014). 391 oncology patients presented to ED and 90% were admitted with mean length of stay of 6.74 days with daily healthcare cost of $1838. Majority (62%) were seen during the daytime and about 50% could have been treated in ambulatory setting. Common diagnoses included fever, abdominal pain, altered mental status, dehydration/electrolyte imbalances, and dyspnea. In August 2014, a pilot program for APP urgent visits was implemented. In the first 8 months, APPs saw 687 patients. 113 patients (16.4%) directly admitted and 15 patients (2.2%) transferred to ED. In conclusion, 81.4% of the patients were discharged to home with appropriate interventions and follow-up. This initiative showed reduction in ED utilization and hospital admissions. Constraints were APP staffing and operation hours, resulting in a business plan for an oncology extended care center (OECC), which opened on 4/3/2017. The purpose was the development of OECC triaging guidelines and treatment algorithms for APP practice with analysis of ED and hospital admissions. OECC is open 7 days from 7AM–11PM and is staffed with 4 full time APPs with oncology/emergency medicine experience. Providers make the referral and OECC APP triages for appropriateness. Triage guidelines have been developed with mandatory provider-to-provider sign-off. The most common OECC visit diagnoses were similar to our analysis in 2014. Currently, treatment algorithms are being developed to standardize management. ED utilization and hospital admissions are being analyzed to determine the impact of OECC. In 6 months (4/3/2017–9/23/2017), there were 1,105 patient visits. Triaging guidelines were evaluated and showed only 9 patients (<1%) were transferred to higher level of care after being seen in OECC. Analysis of ED utilization by our patients is being analyzed but encountering some data limitations, which requires further examination. OECC has impacted hospital admissions as 70% of patients seen in OECC were discharged to home and the remaining admitted. From our initial data before APP urgent care was established, 90% of patients would have been admitted. APP urgent care serves as a vital extension of oncology care we provide and gives has our patients the opportunity to access care outside of the ED, leading to reduction in hospital admissions with impact on healthcare costs and quality of life.

EXPANSION AND INNOVATION IN ONCOLOGY NURSING—THE ONCOLOGY NAVIGATOR MODEL USED AT THE TAIPEI MEDICAL UNIVERSITY HOSPITAL

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Taiwan has excellent physicians and good health care system. However, patient waiting time for the clinic is lengthy and complex cancer information physicians take the key to inform, patient and family make-decision within a short time, According to the research projects that explore the care quality of cancer patients. Important indicators that are lacking include “patient-centered” and “patient needs” integrated care. To address this, our hospital has implemented an oncology nursing navigator model. It is performed three years have had accomplishment many positive effects to improve cancer patient care outcome. The oncology nursing navigator model provides integrated, interdisciplinary care as well as leads innovative active access chart a course through the health care system and overcome barriers to patient-center quality care. This study used a non-randomized controlled quasi-experiment method. Patients in our center were divided into 2 groups. The experimental group included 499 patients who received an attending physician and oncology nursing navigator services and the control group included 822 patients who received the same attending physician without the navigator. Then compare the positive and negative (complete treatment rate, prolongs survival, DNR rate, ADR rate, Insurance pay) outcomes of the two groups. The positive effects, Experimental and control group proportion are: Complete treatment rate: 95% : 80–90%, Overall mortality rate : 4.1% : 14.11%, Health insurance payment: 2,277.39 NT : 0 NT, Patient & family satisfaction: 96.36% : 81.4%. Oncology nursing navigator model used patient-centered care active practice thoroughly in patient’s physical, mind, and spirit needs care. The results indicated that the oncology nursing navigator model improves clinical care quality, prolongs patient survival, and reduces the insurance payment. These results may inform clinical cancer health provider, and address legislative and regulatory issues that affect cancer care and research, and medical insurance public policy in our country.

TEAMING UP TO TREAT ELDERLY AML

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Elderly adults, ages 60 and greater, pose a challenge when diagnosed with Acute Myeloid Leukemia (AML). In 2017 the American Cancer Society estimates there will be 21,380 new cases of AML in the United States, with the average age of diagnosis at 67 years. Of the anticipated 10,590 deaths from AML in 2017, nearly all will be adults. Adverse predictors of elderly AML survival such as comorbidities, frailty, prior hematologic disorder or complex cytogenetic profile, suggest assessment of patient and disease-related characteristics when determining induction treatment. The purpose was to develop an algorithm for AML Induction in the Elderly Adult, Age ≥ 60. A retrospective chart review of elderly AML patients seen at Lehigh Valley Health Network (LVHN) from 2010–2014, revealed 13% overall survival in 120 cases, ages 61–92. Comorbidities were noted in 97% of patients. At five years post diagnosis, there were no survivors in the poor risk cytogenetic group. At three months post development and implementation of the Elderly AML Algorithm there is 75% utilization of the AML-Score calculator. Nurses, physicians, rehabilitation specialists and palliative care practitioners report improved knowledge of induction treatment for AML in the elderly patient as a result of educational initiatives. In response to results of our institutional chart review, a multidisciplinary team of oncology advanced practice nurses, physicians, staff nurses, a clinical pharmacist, physical therapist, palliative care clinician, clinical trials nurse, and heme-pathologist developed an algorithm for induction in the elderly AML patient ≥60 years. Literature review for AML in elderly adults emphasized evaluating both patient and disease related characteristics when determining induction treatment. An AML-Score calculator was incorporated into the algorithm for prediction of mortality risk and complete remission during induction. Referrals to rehabilitation services for assessment of fitness versus frailty, and to palliative care for discussion regarding goals of care promote patient-focused decision making. Treatment regimens were recommended in accordance with the National Comprehensive Cancer Network Guidelines for Acute Myeloid Leukemia Age ≥ 60. Education regarding the algorithm was provided to oncology physicians and nursing staff at clinical meetings, unit based educational sessions and an acute leukemia educational offering. Challenges include: identifying and opening clinical trials for elderly AML, shared patient management between institutions, relapsed /refractory disease.

THE PROCESS OF ONCOLOGY NURSE PRACTITIONER PATIENT NAVIGATION: TRIAGE AN ESSENTIAL PROCESS

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One of the most daunting challenges faced in the health care delivery system is the complexity of cancer care, and the process of care coordination, a subcomponent of patient navigation. The American College of Surgeons has mandated that navigation processes are in place for cancer program accreditation. A study was undertaken in efforts to identify the navigation processes oncology nurse practitioners are currently using. This data is a component of a larger study entitled: The Process of Oncology Nurse Practitioner Patient Navigation: A Grounded Theory Approach. Utilizing a grounded theory approach N = 20 oncology nurse practitioners (ONP) were recruited. To be eligible for the study the ONP had to have a 1) license to practice in their respective state; 2) certification to practice as an oncology nurse; 3) minimum of 5 years full time experience in oncology nursing; and 4) English speaking. The participants were recruited by: 1. word of mouth networking with peers: 2. soliciting volunteers through public announcements at professional nursing conferences; 3. contacting authors of oncology NP navigation articles or convention pamphlets via telephone or e-mail; 4. posting information soliciting oncology NP volunteers on blogs or websites of professional organizations with organizational director approval; and, 5. recruiting by snowball sampling. Telephone interviews were conducted utilizing an open-ended questionnaire. Data analysis and coding revealed the navigation processes. The triage process was carried in a variety of unique settings, and utilized in some instances within navigation subsystems. Key triage paths were identified along the cancer continuum; documenting the need for ONP navigators to strategically place these systems in areas along the cancer continuum, to expedite timely delivery of patient care. Literature search revealed that cancer specific triage tools are lacking. Implications for research and practice include the development of these tools for cancer care. Of critical importance is the need to identify service gaps in cancer care, and strategically place triage systems. The concept of triage as pertains to patient navigation is cancer care is in need of further definition. This presentation covers what is know about triage in nursing, identifies tools that have been used in such settings as ER's. It presents practical ideas and steps for integrating triage systems along the cancer continuum.

THE POWER OF NETWORKING: IT'S A SMALL WORLD AFTER ALL!

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Professional networking is a vital component of growing and building resourceful relationships allowing oncology nurses to collaborate across care settings, benchmark with others, share of best practices/experiences, and avoid reinventing the wheel. Social media platforms and the Oncology Nursing Society (ONS) provide abundant networking opportunities for nurses locally, nationally, and internationally. However novice oncology nurses, may fear making connections or reaching out to experts. In addition, engaging novice millennial nurses about the excitement and benefits of networking has been especially challenging. The purpose of this project was to highlight the importance of networking and being actively involved within professional organizations. Two nurses, one living on the East Coast and one in the Northwest, strategized and developed a presentation to be shared at their local ONS chapters promoting networking and its role in professional development. A self-learning module was created for those unable to attend and placed on social media. The presentation shared stories of collaboration including performance improvement projects, nursing policies/procedures, competencies, and how others have been a resource/mentor through networking. It identified where to network such as journal authors, ONS Communities, referrals from colleagues, and ONS mentorship opportunities for writing articles and abstracts. Methods of networking were reviewed including webinars and conference calls, joining more than one ONS local chapter, attending ONS Congress and other educational events, and seeking out nurse educators from pharmaceutical companies. A What to Ask Others session reviewed the benefits of benchmarking along with examples: how to give drug, how to study for OCN, and inquiring about staffing ratios. A challenge was then offered to identify a nurse to collaborate/connect with followed by a reward for the most contacts. Reward incentives included oncology nursing books, gift cards, and paid ONS membership annual dues. Program evaluations and identification of barriers to utilizing networking opportunities will occur early this Spring. Results will be shared with local chapters and discussion at ONS Leadership weekend. Engaging new oncology nurse millennials in their profession is a struggle across the nation. This education approach could be shared with oncology nurses in various organizations/local ONS Chapters to promote the value of networking. The authors intend to publish this project as well as their finding to raise additional awareness along with solutions.

IMPROVING PHYSICAL ACTIVITY IN BREAST CANCER SURVIVORS

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The National Comprehensive Cancer Network (NCCN) guidelines state that physical activity should be discussed with cancer survivors at every appointment. Research has shown that physical activity can reduce the occurrence, the reoccurrence and mortality of breast cancer diagnosis. Women who exercised and met the guidelines suggested by the NCCN after they were diagnosed with breast cancer, had a 34% lower risk of breast cancer death, 41% lower risk of all mortality, and 24% lower risk of breast cancer recurrence. The purpose of the quality improvement project was to provide education to breast cancer survivors as to why physical activity is so important to their health and to increase the amount of minutes they spend doing physical activity. The intervention included participation in, and evaluation of, an educational session. At this session the participants completed a pretest questionnaire and received education about the importance of physical activity and the recommendations from the American Cancer Society. The participants were urged to utilize an exercise tracker, if they did not have one, a Fitbit was provided. Each participant was sent a weekly text message, reminding them to remain active. At the end of the eight week project a post session was held and the participants completed a posttest questionnaire as well as a feasibility questionnaire. When comparing the pretest physical activity questionnaire and the posttest physical activity questionnaire physical activity increased.

The results were shown to be statistically significant at the alpha 0.05 (p=0.15). 88% of the participants felt that their physical activity was increased due to the project. 94% reported their knowledge base regarding why physical activity for breast cancer survivors is important was increased. 100% of the participants would suggest a project like this to other breast cancer survivors. Participants reported using an exercise tracker such as Fitbit, was beneficial. Health care providers should discuss physical activity at every appointment with breast cancer survivors. A program such as this has a great impact on health care practice. If health care providers are able to get breast cancer survivors more physically active there may be a cost savings to insurance companies and patients may have fewer morbidities and live longer.

ASSESSING THE KNOWLEDGE, ATTITUDES, AND EXPERIENCES OF ADVANCE PRACTICE NURSES REGARDING ADVANCE DIRECTIVES AND ADVANCE CARE PLANNING IN A CANCER SPECIALTY HOSPITAL

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Advance practice nurses (APN) care for adults with cancer across the care spectrum, from diagnosis to death. Despite advances in cancer treatment, cancer remains the second most common cause of death in the United States. Advance care planning (ACP) involves considering end-of-life decisions and preferences ahead of time and documenting them in an advance directive (AD). Despite the importance of ACP, research suggests only a minority of cancer patients have discussions about end-of-life care issues with an oncology clinician. APNs are in key positions to facilitate such discussions. It is therefore valuable to understand how APNs view their role in ACP. The purpose of this project was to determine APNs knowledge, attitudes, behaviors, and perceived barriers to end-of-life care planning with cancer patients. An electronic survey based on a modified version of the Oncology APN's Knowledge, Attitudes, and Practice Behaviors Regarding Advanced Care Planning tool by Zhou et al., (2010) was sent to all practicing APNs at a comprehensive cancer center. To be eligible to complete the survey, the APN was required to be employed as a nurse practitioner. Of 450 potential participants, 119 APNs completed the survey (26%). The majority of respondents (44%) had been working as an APN 0–5 years, 28.6% worked in oncology nursing between 6–10 years, and 33.6% were part of a medical oncology service. The majority of respondents (95%) believed that ACP is very important for patients with life threatening illness, however only 76.5% believe it is their responsibility to discuss ACP with patients and families. 25.4% of respondents routinely initiated ACP discussions in their practice while 20.3% reported neutrality with this statement. Results suggest that participants are knowledgeable of what ACP and ADs are but were split on their reported comfort level discussing ACP. 55.5% of participants reported feeling somewhat inadequate or inadequate in their knowledge of how to conduct ACP conversations and 48.7% felt somewhat confident or lacked confidence to communicate "bad news". Additionally, lack of clarity regarding who should initiate ACP discussions (physician or APN) remains a significant factor. Knowledge gained from this project will be used to guide the design and implementation of an evidence-based educational intervention that will target improving APNs knowledge and self-confidence in conducting ACP conversations.

BRINGING HOSPICE TO A RESEARCH HOSPITAL: ONCOLOGY NURSE ENGAGEMENT

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People enroll in clinical trials at our research hospital for a variety of reasons: altruism, promoting scientific knowledge for better health, or the hope for an effective treatment or cure for a malignancy. Oncology clinical trials often provide this hope. Researchers are optimistic that their trials will extend life or find a cure for the cancer. However, when the research participant continues to have disease progression, it is difficult for both the participant and the researcher to discuss palliative or hospice care. The participant may feel hopeless, and that he/she is "giving up". The researcher may feel like this trial is a failure for not finding a treatment or cure. Generally, the research mission is about discovery, cure, and hope, not end of life care. Oncology nurses are in the unique role for advocating continuity of care through end of life and endorsing hospice to improve quality of care and symptom management. The idea for a hospice unit has been discussed for several years since the eligibility criteria for enrollment into a clinical trial changed to include participants with metastatic disease and poor performance status. Oncology nurses have noticed an increase in participants who miss the opportunity to get home prior to their physical decline. The provision of a milieu promoting a "good death" with specialized hospice nurses has become apparent in our research setting. A project plan was developed in collaboration with the Mental Health and Oncology Clinical Nurse Specialists, Oncology Service Educator, the Pain and Palliative Care Team, and interdisciplinary administrators to develop a hospice unit in our facility. Researchers were introduced to the plan for transitioning their participants to the hospice unit. Current nursing staff interested in working on the hospice unit are educated through didactic; observational experiences at a hospice site, rounding with the pain and palliative team; and hands-on experiences to provide high-quality evidence-based end of life care. Nurse competency is evaluated in simulation and in situ. Our oncology nurses will maintain their relationship with the participant/family providing state-of-the-art care. The inauguration of the hospice unit is scheduled for 2018.

THE USE OF A FINANCIAL INCENTIVE TO ENCOURAGE ADVANCE CARE PLANNING DISCUSSIONS

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Fewer than half of all patients with advanced cancer have had Advance Care Planning (ACP) discussions with their physicians, despite studies demonstrating a patient's desire to have these discussions. Completion of ACP discussions have correlated with a higher rate of completion of advance directives, appropriate de-escalation of care at the end-of-life, and increased utilization of hospice. All of this translates to a higher percentage of patients being allowed to die in their preferred location. Unfortunately, many barriers to ACP discussions have been identified (e.g. provider discomfort and time constraints); however, little work has been done to identify facilitators to ACP discussions. We explored the use of financial incentives as a way to improve the rate of ACP discussions. A large community-based oncology practice offered a financial incentive to each of its 122 advanced practice providers (APP), including advanced practice nurses and physicians assistants with the aim of improving the number of ACP discussions (visits) in the system. To qualify for the incentive, the APP must have been in the top 40% of APPs completing ACP visits during the reporting period of October 1, 2016 through March 31, 2017. Data from billing charges submitted by the APP that reflected ACP visits were used to determine the individuals who were eligible for the incentive. The preliminary data reveal a dramatic increase in the number of ACP visits being conducted when the rates prior to and post-incentive periods are compared. In one clinic site, an average of four ACP visits per month was recorded prior to the incentive program. An that same site, post initiation of the incentive program, an average of 19 ACP visits was recorded per month. Data extraction and analysis are ongoing. A full analysis will be available at the presentation. ACP discussions are a critical part of the cancer patient's ongoing care. Discovering ways to incentivize advance practice providers to this service is important. We found that an incentive program served as a catalyst to increasing the number of ACP visits that were provided to our patients.

ONCO-NEPHROLOGY: A NEW CANCER NURSING SUBSPECIALTY

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The nephrotoxicities of traditional chemotherapies are well known. This knowledge and the emergence of immunotherapy, targeted anticancer therapies and their unique toxicities has led to the development of a new subspecialty: onco-nephrology. It is a rapidly growing field where nurses and nurse practitioners can impact patient outcomes. Increased mortality is seen in cancer patients who have or develop kidney injury compared to those without kidney disease. Renal toxicity can be associated with cessation of effective chemotherapeutic regimens, or may limit the choices of potentially curative regimens. The triad of cancer, kidney disease, and mortality led to the recognition that oncology and nephrology are intricately linked. In 2016 the American Society of Nephrologist published a new curriculum for clinicians working in this field. Oncology nurses must attain high-level competence in caring for cancer patients who develop kidney disease including understanding the pathophysiology of cancer treatment-related kidney disease. Kidney toxicities can be associated with most cancer treatment modalities. Standard chemotherapy is known to induce tumor lysis syndrome, SIADH, acute tubular nephrosis, acid and electrolyte based imbalances. The renal toxicities of targeted and immune therapies are slowly becoming apparent. These include hypertension, proteinuria, hypophosphatemia, thrombotic microangiopathy, autoimmune nephritis and other inflammatory kidney conditions. Treatment with radiation may also lead to acute or chronic radiation nephritis with resultant malignant or benign hypertension many years later. The role of the advanced nurse practitioner is multidimensional. Not only focusing on patient care but on raising awareness among oncology nurses caring for these complex patients. Knowledge of risk factors and etiology of nephrotoxicity can guide nursing assessment and diagnosis, enhance patient education and improve care management. Assessment of patient risk via thorough review of the cancer and treatment history is essential. Evaluation of baseline and ongoing diagnostics with the clinical team and development of patient specific goals is paramount. Cancer treatment-related kidney issues are complex and highly specialized. Oncology nurses and advanced nurse practitioners will be called upon for their expertise to safely guide patients through treatment. Anticipation of treatment related toxicity can provide opportunity to intervene to minimize or prevent side effects. This presentation will provide an overview of cancer treatment-related nephrotoxicity, risk factors, renal protection, monitoring, and nursing care strategies.

THE ROLE OF NURSE CLINICIANS AND ADVANCED PRACTICE PROVIDERS IN THE MANAGEMENT OF SUPPORTIVE ONCOLOGY NEEDS AND TREATMENT-RELATED SIDE EFFECTS FOR WOMEN WITH GESTATIONAL TROPHOBLASTIC NEOPLASIA (GTN)

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Women diagnosed with gestational trophoblastic neoplasia (GTN) have an excellent prognosis with cure rates approaching 100%. Despite the fact that a full recovery is generally expected, these women are confronted with a potentially life-threatening diagnosis, chemotherapy and/or surgical treatment, and delay in future pregnancy. An important component of treatment success in GTN is to address supportive oncology needs and treatment-related side effects. Patient education prior to and throughout treatment is most often the responsibility of advanced practice providers and nurse clinicians. Our objective is to provide each patient with verbal and written, disease-specific, institutional resources before, during, and after treatment of GTN which will result in decreased stress/anxiety, promote patient confidence in their care, increase compliance with treatment and follow up, and improve overall quality of life. We reviewed patient educational materials available from other major trophoblastic disease centers as well as our own. We analyzed evidence-based medicine regarding management of chemotherapy-related side effects using several widely available search engines. We also incorporated our own experience as well as standards of care published by ASCO and NCCN. We developed a patient-directed disease-specific booklet regarding each GTD, chemotherapy treatment plans, nursing interventions for the management of treatment side effects, and supportive oncology resources including psychosocial and oncofertility concerns, as well as a standardized verbal communication tool. Prior to initiation of treatment, the nurse clinician meets with the patient to review the booklet, go over the management plan, including possible chemotherapy-related side effects and preventative strategies, and discuss supportive oncology needs. Although the outcomes for patients with GTN are generally excellent, psychosocial and compliance issues may interfere with treatment success. Conveying educational information to patients in an organized standard format, addressing early intervention and prevention of treatment-related side effects, and providing social support will hopefully impact patient survival and overall quality of life.

HEPATITIS B OUTBREAK: CAN WE PREVENT IT?

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Hepatitis B Virus (HBV) reactivation has occurred in patients with prior HBV exposure who are later treated with drugs classified as CD20-directed cytolytic antibodies, including Rituximab. Some of these cases have resulted in fulminant hepatitis, hepatic failure, and death. The purpose of this retrospective review was to assess documentation related to patients receiving Rituximab to see if Hepatitis B titers are being checked prior to treatment initiation. Of those who tested positive should this necessitate a change in the treatment protocols. The study population was identified on all new patients in the year

2016, age 18–89 years old. This descriptive and retrospective study assessed documentation of oncology and non-oncology patients in one outpatient clinic who were screened for Hepatitis B titers prior to initiation of Rituximab therapy. The results were reported for each patient using descriptive statistics. Between January 1 of 2016 and December 31 of 2016, a total of 45 patient's charts were reviewed, 68% were female and 32% were male. Among these 45 patients, 14 patients were screened for Hepatitis B titers prior to initiation of treatment. Only 40% (18 patients) were diagnosed with an oncologic diagnosis and 60% (27 patients) with a non-oncological diagnosis. One patient converted to a positive Hepatitis B titer result after initiation of Rituximab. The data from 2016 showed that 12 of the 18 patients (67% of patients) with an oncology diagnosis were screened, but there was still 33% without any screening prior to administration of the Hepatitis B vaccination. The result of this study can contribute to the clinical practice by showing the need for monitoring and screening patients receiving Rituximab due to the potential of re-activation of Hepatitis B for any patient with a prior exposure. Also this could lead in the future to identify strategies for implementing a process for educating and alerting the clinician, causing a reduction in the activation of the Hepatitis B virus. There is an increased need to implement a policy change for all patients (oncologic or non-oncologic) to be screened for Hepatitis B titers prior to initiation of Rituximab for treatment.

SELF-CARE SUPPORT FOR PATIENTS WITH GASTROINTESTINAL CANCER: ICANCERHEALTH

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Patient-centered symptom assessment and management tools allow patients to perform self-assessments, learn about symptom management and self-administered medications, and be coached in communicating with clinicians. Previous research has established such tools as efficacious in reducing symptom distress and depression, however little is known about feature-specific use. The purpose of this study was to evaluate the feasibility of the iCancerHealth® app as an adjunct to usual patient education regarding cancer symptoms and medication management. We conducted a single arm study grounded in the Health Outcomes Model. Our evaluation included a) enrollment rates, b) utilization rates over a 2-month period, c) patient acceptability with the Acceptability E-scale and d) clinician satisfaction with the provider-side application. English-speaking, adult patients receiving care the Gastrointestinal oncology service of a comprehensive cancer center were invited to participate by a provider. Research coordinators enrolled consenting participants who had a personal, Internet-connected device. participants registered and used the platform to complete the symptom assessment in clinic at baseline. Participants were called, or met in person during a regular clinic visit, and reminded weekly to use the app and finally, to perform a last symptom report 4–6 weeks later. Results A total of 64 patients were approached to participate, of which 57 (89%; 95% exact CI 79–96%) enrolled. About half were > 60 years old and 40% women. 53 (93%; 95% exact CI 85–99%) accessed at least 1 app feature, at least once, from home. The most frequently used (86%) feature was Health Tracker in which participants could monitor and report symptoms; followed by the My Inbox (63%) and My Medications features (60%). The mean acceptability score was 24.8 (SD=4.2), indicating good acceptability. Clinicians reported that the app was most acceptable with regard to facilitating in person interactions that occurred after app use. In a sample of educated men and women with various stages of gastrointestinal malignancies, the iCancerHealth® app was found to be used remotely at a high rate. Features that focused on symptoms and medication side effects plus communication with clinicians were most frequently used. This extends our understanding of feature-specific use with patient-centered technologies. Oncology nurses may consider referring patients to an available app such as this.

A MULTIMODAL CONTINUITY OF CARE PROGRAM TO PREVENT OR MINIMIZE VAGINAL EFFECTS OF PELVIC RADIATION THERAPY FOR WOMEN WITH LOWER GASTROINTESTINAL AND GYNECOLOGIC CANCERS

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Women with lower GI and gynecologic cancers undergo pelvic radiation as first line therapy. The long term effects of radiation therapy include vaginal stenosis. Sexual dysfunction is one of the most distressing long term effects of pelvic radiation. The use of vaginal dilators is a widely recommended intervention. However, the adherence of vaginal dilator use is reported as less than 50% during the first two years post treatment The purpose of this project was to implement a continuity of care, followup program, to increase vaginal dilator adherence for women receiving pelvic radiotherapy for lower GI and Gynecologic cancers. A multimodal continuity of care program consisting of three visits over a five month period was implemented. Visits occurred before the start of radiation therapy, at the end of treatment, and six weeks later. Each visit consisted of a sexual health assessment, completion of the Patient Reported Outcomes and Measures Information Systems (PROMIS) sexual function survey, education regarding vaginal effects of radiation therapy, and the importance of using a vaginal dilator. Outcome measures included proportion of eligible patients who scheduled and attended each visit. Patient reported resumption of sexual intercourse, dyspareunia, and patient reported use of a vaginal dilator were obtained through patient responses on the PROMIS survey. Out of 16 eligible patients, 16 enrolled into this program. One-hundred percent (n=16) of patients attended the first visit, 83% (n=13) attended the second, and 75% (n=12) attended the third visit. At the third visit, 50% (n=6) of patients reported no dyspareunia with intercourse and 83% (n=10) were using vaginal dilators. These results demonstrate a high enrollment and completion rate of this program, which indicates the importance of vaginal health and sexual function following cancer treatment. The reinforcement of patient education throughout the course of treatment enabled patients to understand the importance of using a vaginal dilator after treatment completion as demonstrated by the PROMIS survey results at the third visit. These results also demonstrate that with education and vaginal dilator use, some patients were able to resume sexual intercourse without dyspareunia. More study of this intervention is needed. The Sexual Health program has been fully implemented, and NP run, in the department of radiation oncology.

LUNG CANCER SCREENING: AN OPPORTUNITY AND A CHALLENGE

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Lung cancer is the cause of 27% of all cancer deaths. The National Lung Screening Trial (NLST), published in 2011 was the first trial to provide evidence to support screening for lung cancer. Therefore, we established the Lung Cancer Screening Program. We targeted our ambulatory outpatient clinic, since primary care physicians play a key role in determining the eligibility of patients for lung cancer screening. The purpose of this project was to establish a lung cancer screening program (LCSP) and to educate the clinical staff about the LCSP process, shared decision, the eligibility criteria for LCS and how to calculate smoking status. In June, 2017, the LCSP pilot was initiated with 4 ambulatory outpatient clinics. The Best Practice Advisory (BPA) was created in the EMR to capture the eligible patients. Orders for low dose CT (LDCT), referrals for lung cancer screening and smoking cessation if necessary were completed. The LCSP physicians recommended the LDCT and clinic visit to discuss the results occur on the same day. We provided educational in-services for the clinic staff, primary care and internal medicine physicians. We reviewed our process weekly and made necessary changes as needed. To date, we have screened approximately 85 patients for the LCSP, 34 have completed the LCSP and 2 patients with early stage lung cancer. Majority of our patients had the CT scan scheduled the same day as clinic appointment to discuss the results. The medical director for internal medicine supported our program and assisted with education and feedback from the ambulatory outpatient clinic. An advanced practice provider (APP) is essential to review the patient's medical records, smoking status and the shared decision with the patient. We efficiently coordinated the patients with radiology to schedule the LDCT and MD visit the same day. However, several patient's preferred to have the PCP contact them with results. Since the LCSP is limited to the cancer center clinic, patients have financial and transportation issues. Innovation: Expand the LCSP to 48 ambulatory outpatient clinics and extend the clinic to other geographic locations in order to provide lung cancer screening to eligible individuals. Our goal is to have an APP manage the LCSP.

APP RUN ONCOLOGY EVALUATION CENTER FOR MANAGEMENT OF COMPLICATIONS OF CANCER AND CANCER THERAPIES

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Oncology care has become increasingly complex in recent years; more patients receive primary anti-cancer treatment in ambulatory settings. However, patients commonly develop complications of their disease or therapy requiring non-scheduled clinical evaluation. As a result, oncology patients often present to an Emergency Department (ED). These visits are associated with higher costs to patients and insurers, physicians may lack oncology-specific knowledge required for managing the unique toxicities of newer anti-cancer therapies, and ED visits are commonly listed as a dissatisfier by oncology patients. In addition, the primary oncology team or infusion center may be unable to accommodate an unplanned patient in a timely manner. Oncology Advanced Practice Providers (APPs) are uniquely positioned to aide in addressing acute symptom management needs. The Oncology Evaluation Center (OEC) is an APP run, same-day evaluation center within the hematology-oncology division at a large academic cancer center. The OEC's purpose is to facilitate same-day/urgent appointments for established patients who develop new symptoms related to their cancer, cancer treatment, or comorbid conditions. The OEC's goals are to decrease the number of ED visits for oncology patients, minimize the impact of add-on appointments on provider schedules, prevent delays in clinic and infusion, and improve patient satisfaction. Algorithms detailing treatment of common presenting symptoms were developed to standardize symptoms management during transitions of care. Since its inception on November 1, 2016, over 500 patients have been evaluated in the OEC. The majority of patients (80%) were discharged to home following this visit. Of the remaining 20% of patients, 13% received further evaluation in the ED, 4% were directly admitted to the Oncology Service, and 2% were further evaluated by another service. Press Ganey patient satisfaction scores and infusion wait time metrics were analyzed. While oncology care becomes increasingly complex, anti-cancer therapy and management will continue to migrate from the inpatient to the outpatient setting. There will be a continued emphasis on decreasing ED visits and hospital admissions. Cancer centers must consider innovative methods for managing patients in the ambulatory setting. Oncology APPs are uniquely positioned to assist in this process due to their expertise in symptom management. An APP-run same day clinic for oncology patients needing urgent evaluation and treatment is a viable mechanism of accomplishing this goal.

ESTABLISHING A RESEARCH NURSE PRACTITIONER-LED CLINIC FOR EARLY PHASE CLINICAL TRIALS

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Establishing a research nurse practitioner lead clinic for early phase clinical trials: Implementing clinical research is a complex endeavor that requires careful coordination between investigators, nurses, practitioners, coordinators, regulatory and ancillary staff. Conducting research in an urban university setting also poses many logistical challenges. Research nurse practitioners are uniquely positioned to alleviate some of these logistical constraints. Clinical trials in general and phase 1 trials in particular often require many more visits than would be required for standard of care. A typical phase 1 study will require up to 5 visits per week during the first few weeks of study. This helps ensure safety and accurate data collection, but these extra visits can strain resources of the facility conducting research. Limited availability of medical providers is one constraint. Principle investigators see study patients either during their established clinics. They also often have administrative, educational and laboratory responsibilities. Adherence to study time points can often make it difficult to schedule required study visits with the treating investigator. Often it is not possible to reconcile a patient's study visits with a provider's established clinic schedule and a covering provider must see the patient. As a result, a patient may go weeks without seeing the same provider. This is a challenge for continuity of care and requires careful communication between providers and staff. The clinical research nurse and research nurse practitioner are involved day to day patient care and help ensure continuity. Establishing a nurse practitioner lead clinic may help with provider availability as well set the basis for a safer & more patient centered clinical trial experience by promoting greater continuity of care. Nurse practitioner role as it pertains to study visits would need to be defined at this institution. At a minimum, the nurse practitioner would be able to independently assess for toxicities and perform study related as well as standard of care exams. Collaboration between the nurse practitioner and investigators would be essential. Investigators would need to be readily accessible in case of serous toxicities or adverse events. Once this model is established within the Phase 1 group, it could potentially be replicated & expanded upon in various tumor groups at our institution.

CLINICAL PRACTICE

GROUP INPATIENT CHEMOTHERAPY/BIOTHERAPY CLASSES: REDUCING UNPLANNED READMISSIONS WHILE IMPROVING SYMPTOM IDENTIFICATION/MANAGEMENT

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This 31-bed inpatient hematology-oncology unit began a chemotherapy class designed for patients/families newly diagnosed with AML receiving induction chemotherapy as a means to improve symptom management at home and reduce unplanned readmissions. The program was successful, prompting an update to include all new chemotherapy admissions. The purpose was to provide all patients/families a group class on chemotherapy/biotherapy emphasizing symptom recognition, symptom management, and resource availability to improve early symptom identification, reduce unplanned readmissions, and increase patient satisfaction. With the success of the pilot chemotherapy class offered to patients undergoing induction chemotherapy (post-1yr), the unit-based Patient-Family Education Committee decided to offer it to all admitted patients newly receiving chemotherapy/biotherapy (post-2yr). Updated course content, began fall 2016, provides basic information on cancer physiology but focuses predominately on symptoms commonly experienced by hematology-oncology patients, symptom management strategies, and resource availability (spiritual, social work/case management, counseling, financial assistance). Class packets include presentation slides, symptom management and safety at home patient education, and 24-hour hotline call access to a hematology-oncology nurse. Staff strongly encourage patients/families to attend prior to discharge. Participants complete class evaluations and feedback is used to improve class responsiveness to patient needs. Descriptive analyses were used to determine the frequency of symptom concerns after discharge and unplanned readmissions. 87 patients have participated in classes since initiation; 30 since updating. Patient satisfaction: Participants report high satisfaction with group classes and find materials and discussion useful. Unplanned readmissions: Pre-intervention=30%; both post-1yr and post-2yr rates are 16.6%. Trends in length of stay suggest that those receiving the classes presented earlier to healthcare with prompt symptom identification, thereby reducing illness severity and duration upon admission. Symptom identification: Discharge calls within 72 hours are routinely performed: post-1yr had 61% verbalizing 30 symptoms and 14 provider/appointment concerns; post-2yr calls had 41% verbalizing 16 symptoms and 9 provider/appointments. Commonalities in call concerns were fatigue, gastrointestinal symptoms, pain, clinic/medication issues. Offering a class focused on symptom management to inpatients receiving chemotherapy is feasible, increases patient and families' understanding of treatment side effects and proper management, and easily implemented and sustainable. Some of the issues that arose since implementation of the class are: staff turnover and retention, maintaining data due to programming advances, and inconsistencies in documentation from staff.

WIPING OUT CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS

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Central line-associated bloodstream infections (CLABSI) are serious infections with a mortality rate as high as 25%, frequently result in prolonged hospitalization, and have an estimated cost per episode of $26,000 (National Quality Forum). In 2015, the Standardized Infection Ratio (SIR) of CLABSI on a 30 bed hematology-oncology unit was over two-times the national average compared to other comparable units (2.98 in Quarter 2, 2015). A SIR greater than 1 indicates more CLABSI than expected; a SIR less than 1 indicates fewer CLABSI than expected (National Healthcare Safety Network). The Institute for Healthcare Improvement recommends a bundled care approach to improve quality and patient safety. Daily chlorhexidine (CHG) bathing is a Category 2 recommendation to prevent CLABSI by the Center for Disease Control. A system-wide central line maintenance bundle was combined with daily CHG bathing to reduce the high CLABSI rate on this inpatient hematology-oncology unit. Swedish Medical Center's central line maintenance bundle includes five elements: 1) appropriate use 2) needleless connectors, 3) dressing, 3) IV tubing, and 5) line patency. Dissemination of the bundle across the health system occurred via multiple routes: education at staff meetings, in-services, flyers posted on units, and presentations at Nursing Quality Improvement and Shared Leadership meetings. The hospital IV team also performed daily rounds on all patients with central lines in the oncology unit. A toolkit of strategies was utilized to implement daily CHG bathing: train-the-trainer sessions, mandatory in-services, CHG protocol posted in patient rooms, binder of teaching materials made accessible to all staff, scripting and an education pamphlet were developed for patients. Daily CHG bathing was implemented in July 2016 to help reduce CLABSI on the inpatient hematology-oncology unit. Weekly audits of compliance were conducted to evaluate impact and effectiveness. Post implementation, only one CLABSI has occurred in 2017 (Quarter 2 SIR 0.7).

USING THE ONS QUALITY MEASURES TO EVALUATE THE IMPACT OF NOVEL QUALITY IMPROVEMENT AND CLINICAL EDUCATION STRATEGIES ON PATIENT OUTCOMES

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Traditional methods of continuing professional development (CPD) have not consistently resulted in evidence-based practice (EBP) change. Fatigue is a prevalent symptom for patients with cancer and while exercise is known to mitigate cancer-related fatigue, assessment and physical activity interventions are not routinely incorporated into practice. The purpose of this study was to measure for improvement in the frequency with which nurses recommend physical activity as an intervention for fatigue during treatment. Two ONS quality improvement measures were used to collect data related to assessment for fatigue and recommendation for physical activity before and after a novel quality improvement education (QIE) program. One community cancer center participated as a pilot site to test the effectiveness of two educational interventions—one focused on implementing evidence and the other on quality measurement and improvement. Fourteen oncology nurses and two APN's participated in the study. Patient education materials were provided as a resource for use by staff. Both quantitative and qualitative data were collected. Practice gap analysis was completed prior to interventions, with repeated quality measurements occurring at 3 months and 8 months post intervention. Pre- and post-intervention assessment of organizational readiness for change, clinical and quality improvement knowledge and attitudes were completed. Stakeholder focus groups included interviews with staff and patients regarding improvement activities associated with this project. Patient feedback was identified by nurses as a strong motivator of intent to change practice, "we value knowing in a deeper way what matters to the patients . . . this concept (evidence) is no longer abstract". Patients in the focus group indicated that the message about physical activity during treatment should be delivered by the nurse and "done right away and repeated often". Variation in knowledge and attitudes related to the nurses' role in quality were demonstrated. One improvement activity implemented by the cancer center staff resulted in development of a standardized workflow related to assessment, which improved measure concordance by 33% - recommendation for exercise increased by about 10% three months after the interventions. Results from the final data collection will be available later in 2017. Translating evidence into practice can be a challenge. The use of novel education, quality measurement and access to registry technology lead to positive outcomes for patients.

MY PATIENT IS DYING. HOW DO I CARE FOR THEM? COMPASSION AND RESPECT AT THE END-OF-LIFE (C.A.R.E)

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Our oncology nurses repeatedly expressed frustration and uncertainty about how to care for dying patients, how to answer difficult questions, manage end-of-life symptoms, and express empathy. This uncertainty and anxiety led to a nurse developed program promoting practice change in the approach to the dying patient. Funding was provided by a generous endowment from a family who received end-of-life care. This allowed a group of 5 nurses to plan for education to all nurses throughout the organization. Developing the program included: a literature search, clinical experiences, evidence based research, attendance at End-of-Life Nursing Education Consortium (ELNEC), and collaboration with symptom management nurses and a palliative care physician. The purpose of our CARE program was to promote practice change and enhance our nurses' ability to provide compassionate, individualized, and dignified care during the end-of-life. A 3.5-hour interactional class was implemented to educate all nurses. The interventions included lecture on palliative and hospice care and strategies, such as role-playing, to practice the difficult discussions RN's have around death. A CAREs cabinet of resources and educational materials, including the City of Hope CARES tool (Comfort, Airway, Restlessness, Emotional support, Self-care), was developed to assist RN's in providing compassionate care and education on symptom management. A translational research project was performed to evaluate the effectiveness of the program and the CARES tool. This study showed statistically significant improvement in 3 categories: RNs reported an increase from 30.7 to 36.2% in ability to enhance patient and family communication around dying, an increase was reported in enhancing cultural and ethical values from 19 to 22.9%. An increase from 18.3 to 21.6% was reported in the RN's ability to enhance effective care delivery. Despite the likelihood of oncology nurses caring for dying patients, undergraduate and clinical education continues to fail to teach and prepare nurses for this inevitability. Care for patients with life limiting illnesses is growing, yet end-of-life training is inadequate and inconsistent. This abstract demonstrates one hospitals method of translating education into practice to improve patient care. One innovative approach was the development of the CAREs cabinet which includes; remembrance and spiritual items, educational pamphlets, and electronic devices to encourage legacy therapy.

TO ADMIT OR NOT TO ADMIT: DOES AN ONCOLOGY EXTENDED-CARE CLINIC IMPACT HOSPITAL ADMISSIONS?

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With the shift of oncology care to the ambulatory setting, there is an increased demand for urgent visits that cannot be accommodated in a busy clinic schedule. This can result in an increase in patients sent to the emergency department (ED) with subsequent inpatient admissions. In 2014, at Smilow Cancer Hospital, a large National Cancer Institute designated comprehensive cancer center, ED utilization and admissions were analyzed. Over 5 months, 391 oncology patients presented to the ED and 90% were admitted. However, 50% of these admissions could have been prevented. Subsequently, an advanced practice provider APP) driven pilot program was implemented for urgent visits. In the first 8 months, 687 patients were seen, with 16.4% directly admitted, 2.2% transferred to the ED and 81.4% discharged to home. To decrease ED utilization and hospital admissions, an oncology extended care clinic (OECC) was established in 2017, where patients can be evaluated and managed by dedicated oncology staff. Acceptance into the Oncology Care Management program (OCM) led to the development of a business plan for the OECC. The two bed, four chair unit is open 16 hours per day, 365 days per year. The OECC is staffed with 4 APPs, 5 registered nurses and patient care associates with a mix of oncology, ED and intensive care unit experience. Patients are seen by appointment only after their provider makes a referral and OECC staff triage for appropriateness. Standard workflows were developed in collaboration with radiology, laboratory, pharmacy, rapid response and the referral services. OECC patients are prioritized for tests and procedures as those in the ED. From 4/3/2017–9/23/2017, 1,105 patient visits occurred, with 70% of patients discharged to home and 30% admitted, a substantial decrease in admissions. The volume per day is consistent with the exception of Sundays and the highest volume hours are from 11am to 7pm. The opening of the OECC has provided our patients with the opportunity to receive urgent oncology-focused care, thus bypassing the ED. The impact on remaining oncology ED visits is being evaluated. The overall patient experience has been exceptional as assessed through patient reports and Press Ganey® scores. The advent of the OECC has shown to be a value added service to the oncology care at Smilow.

NURSES' PERSPECTIVES ON THE PERSONAL AND PROFESSIONAL IMPACT OF PROVIDING

NURSE-LED PRIMARY PALLIATIVE CARE IN OUTPATIENT ONCOLOGY SETTINGS

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National Comprehensive Cancer Network (NCCN) Guidelines dictate that palliative care (PC) should be integrated across the entire trajectory of advanced cancer care. Most cancer care occurs in the ambulatory care setting, often in infusion centers as RNs administer chemotherapy and other cancer care medications. This project examined an intervention developed by Schenker et al. (2015) to increase provision of primary palliative care, capitalizing on RNs' proximity to patients receiving cancer treatment. The Care Management by Oncology Nurses (CONNECT) intervention provides registered oncology nurses with specialty training and support to provide PC in the outpatient infusion room setting. New behaviors and role changes have the potential for both positive and negative impacts on these RNs. The purpose of this project is to describe nurses' perspectives on the personal and professional impact of training and involvement in the CONNECT intervention. All oncology nurses who completed CONNECT training and practiced implementation for at least one month were invited to participate in a formal telephone interview developed for this study. The interview was developed after reviewing current literature related to nurse-led palliative care interventions as well as literature describing role development of the professional RN. Interview responses were analyzed using qualitative description to identify personal and professional impacts of participating in CONNECT. Seven RNs were interviewed, with experience with implementation of CONNECT ranging from three months to one year. Key themes that emerged from analysis included: (1) RNs feel they benefit from the unique one-on-one care and support provided to patients by CONNECT through a sense of personal and professional fulfillment; (2) RNs feel participation as a CONNECT RN enhanced their communication skills with patients, particularly in discussing goals of care and advance directives; and (3) RNs cite inadequate time and staffing to implement CONNECT in busy clinics as a source of increased stress and frustration counteracting the positive impacts they experience from participation. Understanding how participation in CONNECT impacts RNs both personally and professionally will help to improve its delivery. Personal and professional growth experienced by RNs providing primary palliative care will strengthen provision of the intervention. Time and staffing issues must be addressed to avoid negative impacts on RNs and ensure sustainability of primary palliative care interventions.

USING DECLINING PATIENT CONDITION SIMULATIONS IN THE RADIATION ONCOLOGY OUTPATIENT SETTING TO IMPROVE CLINICIAN RESPONSES

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Patient acuity and the complexity of ambulatory procedures are increasing across the spectrum of healthcare in the United States. This trend is no different in radiation oncology, where patients experience emergent issues. While many of these issues can be prevented, thus avoiding emergency situations, most education only focuses on identifying and responding to the most emergent clinical situations. Patients who are declining are at increased risk of advancing to emergent conditions because of the lack of evidence-based guidelines to prevent further clinical decline. The purpose of this quality improvement project was to improve the knowledge and comfort level of the care team in responding to urgent patient care situations in the ambulatory radiation oncology setting. An interprofessional educational plan was developed to shift focus from emergent scenarios to focus on declining patients. As part of that education, simulations were developed using examples of actual clinical situations, i.e., hypoglycemia/hyperglycemia, acute airway decompensation, seizures, mucus plugs, etc., and focused on preventing patients from further declining into emergent conditions. The plan included quarterly didactic, inter-professional education and hands-on simulations. Pre- and post-education assessment surveys measured comfort levels of clinicians before and after the intervention. Post intervention, results were statistically significant for the ability of team members to know the process to call for help ($p<0.005$), identifying the role of other team members when responding to a patient crisis ($p<0.05$), managing seizures with complications ($p<0.05$), and knowing specific items used to intervene when a patient is in crisis ($p<0.005$). There was no statistically significant difference in respondents' abilities to recognize when patients were declining, regardless of the respondents' role (i.e., nurse, technician, or provider). Until recently, the focus in ambulatory settings had been the practice of emergencies and code blue scenarios. As patient acuity and care complexity increase in these settings, clinicians can benefit from review of urgent care and scenarios of patients deteriorating that focus on the broader scope of care. Results of this project indicate that, while educating interprofessional staff to recognize patients who are deteriorating is important, a focus on the importance of team dynamics is equally important.

IMPROVING STANDARDS OF CARE AND NURSING JOB SATISFACTION IN OUTPATIENT ONCOLOGY THROUGH A DISEASE-SPECIFIC TEAM MODEL

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Our outpatient academic cancer center serves 16,000 patients a year. Patients with leukemia, lymphoma, multiple myeloma and benign hematologic disorders have clinical nurse coordinators (CNC's) as their primary point of contact for triage, symptom management, care coordination and education, in clinic and by phone. The current nursing model aligns each CNC with 1–5 providers and their entire panel of patients. They offer continuity of care across multiple hematologic disorders. CNC work hours often extend beyond the designated clinic schedule of M–F, 8AM–5PM. The current model has been successful in offering very good continuity of care for patients, but results in uneven workloads, leading to overtime and nurse burnout. The purpose of this project was to re-design the CNC model of care to maintain excellent continuity of care while creating a system to level-load work volumes, foster enhanced disease expertise and promote job satisfaction. Acute myelogenous leukemia (AML) was chosen as the disease-specific pilot team for the re-design. The model maintained a primary care relationship between nurse and patient and moved away from strict alignment between nurse and provider. A disease-specific team approach was adopted such that each CNC could field any and all patient questions, needs and care. The CNC's developed patient education specific to AML and also a system for tracking patient information for standard communication and handoff. As the level of team expertise expanded, the model broadened the accessibility and scope of clinical nursing resources for AML patients, families and providers. This disease-specific model of nursing care delivery allowed for level-loading of work volumes, improved patient education and access to nursing, and improved job satisfaction for CNCs. This team approach allowed the nurses to evenly distribute their patient loads and also extend their hours of availability (730AM–6PM) through adoption of alternate work schedules. This, in turn, reduced OT and burnout. The re-design of the CNC model allowed for state-of-the-science expertise for specialized disease care management. While promoting best patient care practices, the model helped to foster staff professional development and honor work-life balance. An added benefit has been that one of the nurses has taken on the role of research liaison—attending tumor board meetings to be able to act as the point person for active research protocols.

THE EFFECT OF AROMATHERAPY AND FOOT REFLEXOLOGY ON PAIN AND ANXIETY DURING BRACHYTHERAPY FOR CERVICAL CANCER

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Transvaginal and uterus brachytherapy applicator placement causes cramping visceral pain and nerve pain, which results in increased anxiety. Key time points identified by patients for pain and anxiety during these procedures include placement of the applicator, during treatment, and with applicator removal. Some studies have demonstrated that over 40% of these women develop Post Traumatic Stress Disorder (PTSD) after repeated procedures. The implications of a non-pharmacologic treatment for pain and anxiety during treatment may significantly impact the psychologic effects of brachytherapy on these women. The purpose of this project was to determine if the addition of aromatherapy and foot reflexology to standard care improve pain and anxiety in patients receiving brachytherapy for cervical cancer. This research project is designed as a randomized controlled clinical trial, with the control group receiving standard of care and the experimental group receiving the addition of aromatherapy and foot reflexology. The Numeric Rating Scale will be used for patients to rate their pain, and the State-Trait Anxiety Inventory for Adults, short form, will be used for patients to rate their anxiety at five different times during their visit. Preliminary results will be available by poster presentation. In order to achieve at least 80% power to detect a treatment effect from the aromatherapy and foot reflexology the sample size will be at least 20 patients in each treatment group for a total of 40 patients. This sample size will detect a treatment effect of 0.6 or more pain points and 0.6 anxiety points. Because of the invasive nature of brachytherapy, with potential long lasting emotional effects on the patient, additional measures to safely help alleviate pain and anxiety from the procedure would provide a significant benefit to the well-being of women with locally advanced cervical cancer. The findings of this study could impact oncology practice through the routine use of aromatherapy and reflexology. Aromatherapy and reflexology can be safely and effectively administered by nurses with minimal training. The option of aromatherapy and reflexology can enhance management of pain and anxiety in this patient population where much time and expert medication management is required during repeated ambulatory visits.

DEVELOPMENT OF EDUCATION AND GUIDELINES IN MANAGEMENT OF PATIENT CARE FOR IMMUNE EFFECTOR CELL ADMINISTRATION—CHIMERIC ANTIGEN RECEPTOR (CAR) T-CELL THERAPY

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Car T-cell therapy is a novel targeted therapy which our BMT Unit (BMTU) has administered for patients diagnosed with DLBCL, MCL and ALL. To accomplish this, the nursing team worked closely with BMT, lymphoma, and leukemia leaders to develop practice standards. The purpose of this clinical practice abstract is to describe and share the process of training for inpatient and outpatient staff; standardize policies and procedures for the administration and management of toxicities and complications of Immune Effector Cells to promote competent and safe high quality care. A multidisciplinary team was assembled to assure appropriate programmatic development. Educational materials and resources were developed to meet the needs of inpatient and outpatient staff to optimize safe care. The BMTU was the designated area for administration and monitoring unless the patient required a higher level of care necessitating co-management with ICU providers. The BMTU staff had a high level of competence and expertise in administration of Cellular Therapy Products. Referencing existing standard policies for cell administration, the nursing team was able to distinguish differences in Immune Effector Cell administration and create a new policy and checklist for CAR T-cell product administration. We also developed a policy for managing toxicities and complications of Immune Effector Cell therapy to ensure a positive outcome for this patient population. Competency development included training tools such as live PowerPoint presentations, discussions, written materials, and required SOP review prior to the nurse being deemed competent in the care of patients. A core team of nurses and providers partnered to provide a level of expertise for new learners. This allowed team members to identify patient needs in a timely manner to provide effective management and safe care. Three patients treated between 2016 and 2017 experienced expected toxicities which were identified and managed effectively. There were no prolonged hospitalizations and none experienced complications related to CLABSI or hospital-acquired infection. All patients recovered as anticipated and were discharged to appropriate outpatient follow up care. We have been selected as one of twenty centers collaborating with Kite Pharma (Santa Monica, CA) to administer the CAR T-cell product.

IMPLEMENTING PREVENTATIVE LOW LEVEL LASER THERAPY IN HEMATOPOIETIC STEM CELL TRANSPLANT PATIENTS TO PREVENT ORAL MUCOSITIS: FOLLOW UP OF PATIENT OUTCOMES

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It has been determined that oral mucositis (OM) is one of the most incapacitating side effects experienced by hematopoietic stem cell transplant (HSCT) patients. In fact, 97% of patients receiving the common conditioning agent busulfan experience mouth ulcers. The effect of preventative Low Level Laser Therapy (LLLT) was measured using a cohort of 19 patients who received busulfan. Impact was measured by examining each patient's OM toxicity level, need for a patient controlled analgesic (PCA) and if additional therapy, specifically methotrexate, was held due to the severity of OM. The purpose was to determine 1) if preventative LLLT impacted the patient's quality of life by preventing or eliminating severe OM while receiving a busulfan conditioning regimen, 2) if the patient's pain level was controlled to the degree of not requiring a PCA and/or 3) if the patient continued to receive all methotrexate as ordered. To maintain consistency, all preventative LLLT treatments were administered on Mondays, Wednesdays and Fridays. If the busulfan was administered on any other day of the week, LLLT treatment was initiated the following Monday, Wednesday or Friday closest to the first day of busulfan administration. LLLT was discontinued when the patient's ANC remained at or above 500 for two consecutive days. Preventative LLLT was done in conjunction with education on proper mouth hygiene. Patients were taught to use a normal saline swish after each meal and before bedtime, to brush with sodium bicarbonate toothpaste and how to properly inspect their mouths. Both the normal saline swish and sodium bicarbonate toothpaste were provided by the hospital. Better outcomes were noticed in compliant patients. Zero patients developed a grade 4 OM toxicity level and 11 out of 19 developed Grade 3. 8 out of 19 patients were able to continue their conditioning treatment and received full doses of methotrexate. Only 6 out of 19 were placed on PCAs for OM pain. Preventative LLLT is an excellent tool used to reduce OM toxicity. It allows more patients to receive their full chemotherapy regimens, decreases the use of PCAs and provides extraordinary patient satisfaction while improving quality of life. With proven efficacy, UPMC Shadyside Hospital may now expand to treating other oncology patient populations who are at increased risk for developing OM.

ABATING ALOPECIA: TREATING HAIR LOSS AS A CHEMO TOXICITY IN BREAST CANCER PATIENTS (MALE AND FEMALE)

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Chemo-induced alopecia (CIA) the most publicized adverse effect in mainstream media, propelling the stigma associated with a cancer diagnosis. Despite its notoriety, alopecia continues to be widely viewed in the clinical world as a cosmetic issue instead of a true chemo toxicity that can lead into significant psychosocial adverse effects. A survey conducted in a breast cancer population revealed 47% of participants rated alopecia as the most traumatic adverse effect, with 8% reporting refusing chemo due to alopecia alone. The purpose of this project was to promote the notion of chemo induced alopecia as chemo toxicity with psychosocial adverse effects to frontline chemo infusion staff by incorporating the service into frontline staff standard work rather vs. service provided by an outside company independent of chemo. The breast cancer population was selected based on FDA approval of Dignicap in breast CA patients in the neoadjuvant setting receiving TC, PTCH, and AC. Hair loss is inevitable even with scalp cooling, what it offers is a decrease in the amount of loss, <50%. Endorsement from institution to provide the service as symptom management was obtained. Business model to support revenue for services rendered was created. Training of staff took place via hands on in-services and competency validations. The Medical Assistants in the infusion clinic took full ownership of initiating and coordinating time specific execution of treatment with the infusion nurse. Common Toxicity Criteria (CTC) scale was used to grade hair loss and subjective interviewing was used to gauge patient perception of effectiveness. In 12 months, 31 breast cancer patients (30 female, 1 male) chose to participate. 64% of participants were assessed at grade 1 or less alopecia post treatments; 13% were assessed as grade 2 alopecia post treatment; 22% did not complete full course of treatment due to excessive hair loss and/or discomfort from cold. Patient perception of successful abatement from alopecia varied. Objective data revealed patients with thinner hair achieved better results although they did complain of more pain during treatment. Patient head shape and size also contributed to results. Challenges related to infusion space allocation and equality of service available based on consumer ability to pay continue. FDA approval has spread to all solid tumor malignancies and is gaining acceptance as symptom management.

EVALUATION OF A STANDARDIZED TITRATION SCHEDULE TO BE UTILIZED FOR THE ADMINISTRATION OF ALL PACLITAXEL INFUSIONS

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Paclitaxel, a frequently used chemotherapy agent, can cause infusion-related hypersensitivity reactions.

Re-challenge protocols for hypersensitivity reactions exist; however, there is a lack of titration guidelines for the initial infusion of paclitaxel to reduce reactions associated with higher infusion rates. Paclitaxel prescribing information and our hospital policy and procedure simply state to "administer slowly." The aim of this project was to establish a titration schedule for paclitaxel that would reduce the rate of infusion-related hypersensitivity reactions in the adult ambulatory infusion center. A retrospective chart review of all patients who received a 3-hour paclitaxel infusion from April 2015 to August 2016, showed an average reaction rate of 9.2%. A review of nursing practices via in-person interviews revealed a link between administration practices and hypersensitivity reactions. Nurses who had not accounted for the initial 20ml of NS pre-primed in the IV tubing had a higher incidence of patients experiencing hypersensitivity reactions than those who did account for the NS priming volume. It is hypothesized the patient received only saline during the recommended "slow infusion" time period and the rate titration occurred at the point when the paclitaxel finally reached the patient. Based on these findings the paclitaxel titration protocol was developed and included an initial bolus of 20ml NS to clear the priming volume of the tubing prior to the initiation of a stepwise titration schedule. The new paclitaxel titration protocol was used by the nurses for every paclitaxel administration from October to December 2017. The paclitaxel infusion reaction rate decreased to less than 1% for all paclitaxel infusions during this 3 month period. The nursing staff were reluctant to implement a standardized titration schedule without evidence. However, the retrospective analysis of reactions demonstrated the impact of administration practices on reaction rates and the need for a standardized infusion protocol. The nurses now report increased confidence and satisfaction with paclitaxel administration. The absence of concrete titration guidelines for paclitaxel has led to a variety of administration practices as well as an increased risk of hypersensitivity reactions. This project has developed an evidence-based paclitaxel infusion protocol that supports safe patient care.

IMPROVING COMMUNICATION IN THE TRANSFER OF CARE IN NURSING HANDOFF: PERFECTING A CULTURE OF NURSING COLLABORATION AND PATIENT SAFETY IN THE OUTPATIENT INFUSION SETTING

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Ineffective communication in the transfer of care (TOC) in handoff between practitioners is a leading cause of sentinel events. The Joint Commission identified improving communication as a national patient safety goal. One strategy to enhance communication is improvement in handoff processes. Inpatient nursing handoff has been well studied but a gap in the literature exists for the outpatient infusion setting. A critical evaluation of handoff processes is essential. The purpose of this project was to develop and implement an effective TOC nursing hand off tool and procedure to improve communication, patient safety and nursing satisfaction. At our outpatient infusion unit a pre-survey was conducted to evaluate nursing perception of the huddle style (all nurses at a central nursing station) of TOC which included a task oriented written tool. We changed the handoff process to a one to one nurse handoff in the presence of the patient combined with a systems focused written tool. A mid survey evaluated nursing perceptions of this change. A final survey was conducted to evaluate nursing perceptions of the new TOC process and tool. A post survey (N=25) revealed improved patient safety measures and increased nurse satisfaction with communication in TOC. An improved communication process was achieved. A new hand off procedure and tool were developed and implemented resulting in written, electronic and chairside communication between nurses, patient and caregivers. Care delivery is shifting from inpatient to outpatient settings. Outpatient infusion units are treating more patients with higher acuity and increasingly complex treatments. Therefore, effective outpatient nursing communication is necessary to promote safe continuity of care. Implementing a new one to one nurse handoff style of TOC coupled with systems focused written and electronic tools at the chairside offers the possibility to change nursing culture in the outpatient infusion setting to increase patient safety and fulfill the national patient safety goal to improve healthcare communication. Improvement areas include: enhancing nursing collaboration through one to one nursing handoff, providing complete and thorough information and affording an opportunity for questions and dialogue between nurses and patients. Use of this handoff tool and procedure has improved the quality of communication in the TOC in nursing hand off and improved patient outcomes.

COMBATING CHEMOTHERAPY VERIFICATION FATIGUE: NURSE-LED QUALITY IMPROVEMENT INTERVENTIONS IN PRE-TREATMENT LAB EVALUATION

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Oncology nurses work in fast-paced environments where they are required to undertake numerous tasks simultaneously, including evaluating lab results prior to chemotherapy administration. The routine nature of tasks involved in lab evaluation may make the process automatic, thus increasing the risk for errors. In this project, near-misses were defined as orders approved by nurses, but halted by pharmacy because labs did not meet treatment criteria or lab results were pending. Pre-intervention data, collected over six non-consecutive weeks, identified 36 near-misses in total (range 4–11 near-misses/week). Our aim was to reduce the number of near-misses by fifty percent over three months. A staff survey identified potential causes, including lack of clear treatment criteria, a delay in lab processing, and patients expressing distress due to long wait times. A cause-and-effect diagram was presented to staff nurses, who brainstormed on possible interventions. Various interventions were evaluated by the nurses according to two domains: the perceived ease in implementing each intervention and its perceived effectiveness. Two interventions were identified as easy to implement and likely to be effective: a two-nurse lab check during order verification and utilization of "display the last day" function in the electronic medical record to limit the lab display. Post-intervention data was collected over nine weeks immediately after the project announcement. Only one near-miss was identified during the period. Follow-up data was collected seven months after the interventions and identified eleven near-misses over six weeks (range 0–3 near-misses/week). A control chart plotted weekly counts of near-misses and indicated a special cause leading to a decrease immediately following the interventions. The post-intervention surveillance, collected seven months later, showed a slight increase in near-misses, although the counts remained lower than the pre-intervention baseline. A follow-up survey among staff nurses listed barriers to full success, such as returning to past habits and the primary nurse simply telling the second verifying nurse that pre-treatment labs have been verified. Our nurse-identified-and-led interventions were successful in reducing the number of near-misses. Further interventions are needed to sustain this low occurrence over time. There may be a limit to how human actions alone can produce sustainable changes. Identification of latent failures and interventions to correct them may be necessary to engender sustainable changes.

WAKE UP: A PRESCRIPTION FOR INCREASING PATIENT SAFETY IN THE AMBULATORY INFUSION ROOM

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At Baylor Scott and White Vasicek Cancer Treatment Center (BSWVCTC), intravenous (IV) diphenhydramine was traditionally the histamine blocker utilized to prevent hypersensitivity reactions (HSR). Diphenhydramine is a central nervous system (CNS) depressant, causing increased sedation, confusion, irritability, restlessness, etc. The Beer's list classifies diphenhydramine as a medication that should be avoided in the elderly population due to decreased drug metabolism. Avoiding the use of inappropriate and high-risk drugs is an important, simple, and effective strategy in reducing medication-related problems and adverse drug effects (AE) in older adults. Nurses play an important role in understanding how medications impact patient safety and identify opportunities for practice change. BSWVCTC frequently encountered AE related to the use of IV diphenhydramine that negatively influenced patient safety and comfort. Reported adverse effects include sedation, increased fall risk, altered mental status, incontinence, IV dislodgement, driving impairment, restless legs, hypotension, and inability to report symptoms of reactions. Nurses noted that patients receiving cetirizine prior to treatment did not report the same CNS AEs. Nurses developed a system to identify patients that received diphenhydramine as a fall risk. This system occurred because these patients often required one-on-one nursing care. Patients who had received multiple doses of diphenhydramine with repeated reports of restless legs converted to cetirizine. These patients experienced significantly less CNS effects. This observation led to infusion room nurses requesting a pharmacy review of current practice. Pharmacists subsequently completed a literature review on efficacy of various infusion premedications. The process of exchanging diphenhydramine for cetirizine began. One nursing concern when making this change was the required wait time for using an oral antihistamine blocker (cetirizine). The onset of action for cetirizine is comparable to the onset of action for diphenhydramine, alleviating this concern. Furthermore, there was no increase in infusion-related reactions secondary to the change. Nurses observed decreased incidence of CNS depression, reduced report of restless leg, decreased need for one-on-one nursing care, and overall improved patient safety. Many chemotherapy and biotherapy agents require premedication to prevent HSRs, often including diphenhydramine. Because cancer incidence increases with age, many oncology patients have altered drug metabolism. This can lead to increased AE's. Utilization of a second generation antihistamine, such as cetirizine, can decrease these negative effects.

WHO'S YOUR BUDDY? A TEAMED APPROACH TO REDUCING CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS IN ONCOLOGY PATIENTS

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Central Line Associated Blood Stream Infections (CLABSIs) from temporary and permanent central lines pose significant risks for the hematology oncology and blood and marrow transplant (BMT) patient populations. The Clinical Nurse Leader (CNL) on an inpatient oncology unit presented the "Buddy System" concept to the unit Practice Council as an intervention to address an increase in CLABSIs after the unit RNs resumed responsibility for dressing changes. The goal of the Buddy System is to provide peer-to-peer accountability for meeting standards of care and to facilitate growth and confidence of newer RNs who have less experience with sterile dressing changes. The CNL and Nurse Educator (NE) prepared a tip sheet for RNs outlining the health system's central line dressing change policy and the new Buddy System. Important points of the tip sheet included peer-to-peer accountability and selecting an experienced Buddy. Both RNs initialed the new dressing and spot audits were conducted by the unit Quality Council, NE, and CNL. During the first months of the Buddy System the CNL and NE observed practice deviations and saw a corresponding spike in CLABSIs with common skin organisms. The NE and CNL conducted one-on-one skills checkoffs with every RN to verify competency. In the six months post-intervention, CLABSI rates were reduced by more than 50%, falling from 3.13 cases/1000pt-days to 1.26 cases/1000pt-days. Further, in the nine months post intervention, the rate has not risen above 1.55 cases/1000pt-days, indicating the practice and results are sustainable. An unexpected benefit occurred when RNs began pointing out practice deviations not just on dressing changes but also on lab draw and medication handling procedures. This increased accountability has allowed the NE and CNL to re-educate to promote consistent quality care. The reduction of central line infections in this vulnerable patient population has many implications including potential reduction in antibiotic use, fewer transfers to intensive care units, and reduced length of stay. In addition, it is estimated this intervention has resulted in at least $180,000 in savings to the health system as central line infections are non-reimbursable costs.

CAN VIRTUAL NAVIGATION IMPACT PATIENT CARE AND RETAIN PATIENTS?

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Colon cancer is the 3rd most commonly diagnosed cancer and the 2nd leading cause of cancer death. Colon cancer is diagnosed at an early stage (I or II) about 45% of the time in our managed markets. Treatment involves a surgical resection followed by surveillance. These patients often migrate out of HCA facilities, as late stage (III and IV) patients require more time from on-site navigators due to multi-modality treatment. Sarah Cannon piloted a Virtual Navigation program in 7 HCA facilities to assess the ability to navigate early stage colon patients virtually, allowing the on-site GI Navigator (GIN) more capacity to focus on removing barriers for late stage patients. The virtual colon navigator (VCN) allows HCA to retain early stage patients throughout their treatment and surveillance. Sarah Cannon developed a proprietary patient identification system utilizing artificial intelligence. This technology identifies colon patients at the point of diagnosis and sends the positive pathology reports to the VCN. The VCN triages all colon cancer patients by telephonically navigating the early stage patients and transferring the late stage patients to a GIN. The VCN helps patients understand their diagnosis, provides educational materials, assists with overcoming barriers, connects patients with resources, and benefits patients with survivorship by tracking when repeat colonoscopies are due, utilizing physician recommendations and national guidelines. The VCN triaged a total of 111 colon cancer patients during quarters 1–2 in 2017. 50 patients were early stage and navigated virtually. 61 patients were late stage and transferred to an on-site GIN for face-to-face support. 97% of these combined stage patients were retained and treated at a HCA facility. The support of a VCN program is proven to increase access to navigation services and improve overall patient retention. It also allows the opportunity to focus the on-site navigator's time with the more complex patients. The virtual pilot study was successful and taken to the enterprise level with expansion to 20 additional HCA facilities and required the hiring of a 2nd VCN. Sarah Cannon is putting a business case together to extend this program to additional tumor sites.

REDUCING INPATIENT ADMISSIONS AND EMERGENCY ROOM VISITS WITH ONCOLOGY NAVIGATION TEAMS

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The Oncology Care Model (OCM) is a Center for Medicare and Medicaid Innovation (CMMI) initiative that encourages practices to provide enhanced services, with the goal of improving patient outcomes and producing a higher quality of care while decreasing overall cost of care. On July 1, 2016, the USA Mitchell Cancer Institute (MCI) joined 191 other oncology practices on the OCM journey of practice transformation. Prior to OCM, MCI's navigation team consisted solely of Lay Navigators, responsible for identifying and removing barriers to care and other non-clinical activities. This program was sustained beyond completion of the CMS Patient Care Connect Program in 2015. A thorough review of the MCI site data revealed that although Lay Navigation made a significant impact in reducing barriers to care, the program had little impact on clinical outcomes. Therefore, an early OCM implementation was to fill the identified clinical gap by supplementing Lay Navigators with Oncology Nurse Navigators (ONN). MCI's ONN program began with two ONNs and a working manager. OCM-eligible patients were assigned both an ONN and a Lay Navigator. The ONN was the primary patient point of contact, allowing for direct connectivity to the ONN when issues arose. The ONN navigated patients based on individual need and acuity, with each patient receiving a comprehensive treatment care plan, including 30 minutes or more of individualized care plan review and education. The ONNs provided patient-specific diagnosis, treatment, and side effect education, PHQ2/9 depression screening and monitoring, and symptom management triage throughout the course of treatment. Patients were encouraged to call their ONN for any clinical needs (particularly new side effects), questions or needs, and were continuously instructed to seek advice from their ONN prior to an Emergency Room (ER) visit, except in true emergencies. MCI OCM patients being navigated by the combined Oncology Navigation Team have experienced a significant reduction in inpatient admissions and ER visits when compared to baseline data (April 2015–March 2016). Inpatient admissions decreased 17%, while ER visits decreased 13%. Furthermore, neither improvement resulted in increase of overall Medicare expenditures. By simply evaluating inpatient admissions and ER visits, MCI has demonstrated that the addition of Oncology Nurse Navigators was beneficial for both patients and practice alike, and did improve clinical outcomes as expected.

SUSTAINING POSITIVE OUTCOMES WITH A PROGRESSIVE UPRIGHT MOBILITY PROGRAM PROTOCOL IN CANCER PATIENTS

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Critical illness associated with immobility leads to significant morbidity, including increased ICU and hospital lengths of stay (LOS) and prolonged deconditioning. Previous studies have demonstrated improvements in LOS and ventilator days when early institution of mobility programs are utilized; however, malignancy and short expected life span have been exclusions from all prior studies. The purpose of this investigation was to examine the safety and effectiveness of a Progressive Upright Mobility (PUM) program in critically ill ventilated cancer patients. The goal was to examine the compliance and sustainability of our previously implemented PUM program in measuring patient ventilator days, ICU and hospital LOS. After twelve months of baseline data was collected investigating ventilator days, ICU LOS and hospital LOS, a stepwise multidisciplinary PUM protocol was developed and followed in all mechanically ventilated patients admitted to a single subspecialty cancer hospital ICU. Exclusions to protocol included hemodynamic instability, and the need for continuous sedation or neuromuscular blockade. Accountability was assessed daily by the charge nurse to ensure adequate and consistent documentation. Utilizing professional clinical judgment, patients were assessed for advancement through the five steps of the nurse driven protocol. Data from control period (Pre) was compared to twelve month post-intervention (Post) data. To determine sustainability, an additional twelve months of data was collected and compared to the Pre and Post intervention groups. Compared data included demographics, severity of illness, ventilator days, and LOS. Statistical analysis of the data included comparison of means and analysis of variance (ANOVA). The Post protocol implementation group demonstrated statistically significant outcomes in the three areas measured; ventilator days reduced from 6.3 to 3.7 (p=0.001755), ICU LOS 10.2 to 7.5 (p=0.011016), and hospital LOS 20.9 to 14.1 (p=0.000364). Despite oncology patients having a high severity of illness and likely functional decline, they proved to show the same beneficial results of early mobilization as previously studied groups. The results reflect consistencies with current literature supporting the absence of complications in early mobilization of patients in the ICU. The nurse driven PUM protocol provides evidence of safe, positive patient outcomes, while decreasing cost of care. To our knowledge, this remains the only mobilization study conducted in an oncology critical care setting.

CHILD VISITATION GUIDELINES: DEVELOPMENT AND IMPLEMENTATION ON AN INPATIENT CANCER CENTER UNIT

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Restricting child visitation in oncology inpatient settings has been common practice for infection prevention reasons. Age-based visitor restriction is neither evidence-based nor recommended by any professional organization and it conflicts with the gold standard, patient-centered care. This discrepancy was recognized by nursing staff and brought to an academic medical center unit-based governance council (UGC). The purpose was to develop and evaluate a standardized oncology nursing unit visitation process that supports patient-centered care. Visitation guidelines and screening criteria, including a form to screen child visitors <12, were developed in conjunction with Infection Control and Infectious Disease personnel to detect signs and symptoms of infection in all visitors. Thirty-five oncology staff (nurses, nursing assistants and unit secretaries) completed a nine-item survey about screening practices and barriers for a 39% response rate. The survey consisted of six, 5-point Likert items and 3 open response items. The UGC group used responses to guide staff education and clinical implementation. Staff was educated via in-services and a mandatory continuing education module (69% completion rate). Laminated copies of the guidelines were posted in each patient room and a binder was created to house additional resources for staff. After 3 months, a convenience sample of thirty-six staff (47% response rate) completed a post survey. Mann-Whitney U was used to compare pre and post survey quantitative items. Post-implementation, staff were significantly more likely to agree with the following compared to pre-implementation: there is a unit specific visitation guideline (U=209.0, p = .000), they were comfortable explaining current visitation practice reasons (U=424.5, p = .012), and they screen all patients (U=411.5, p = .013). Staff were less likely to report lack of visitation guidelines was a screening barrier (U=241.5, p = .000). Other barriers (e.g., awareness of visitors on the unit and time commitment) did not significantly improve. Open-ended items were analyzed using content analysis. Post-implementation, staff listed more signs and symptoms of infection and more information about visitation rules and rationale. Standardized visitation guidelines increased oncology staff's reported comfort level with explaining visitation rationale and screening process. Staff identified barriers to screening, which are being addressed. This guideline will continue to be evaluated for its use, and the impact on patients, families and infection using a quality improvement perspective.

STOP THE BEEPS! DECREASING NOISE LEVEL AND ALARM FATIGUE ON AN ONCOLOGY INTERMEDIATE CARE UNIT

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Noise level of an oncology intermediate care unit increased during the year 2015. Specific to this unit, patients stay for long periods of time due to chemotherapy regimens/extensive surgeries, therefore noise levels must be conducive to healing. In addition, staff noted alarm fatigue related to unnecessary alarms potentially compromising patient safety. Recognizing this, staff nurses created a multi-faceted plan to address these challenges. The purpose of this project was to decrease noise levels and improve patient outcomes, as well as decrease nursing alarm fatigue through implementation of a nurse-led action plan. A needs assessment was performed by surveying staff and obtaining monitor data. The unit based council presented an action plan and collaborated with physicians and administration to begin implementation in 2016. Interventions were initiated in three areas of concern: staff fatigue, inappropriate default settings and multiple systems monitoring one patient. Staff nurses ordered equipment necessary to monitor critical care patients solely on one monitor, to decrease duplicate arms. Nurse to nurse report began to include the checking of alarms and settings. Education was provided on a peer- to-peer basis, from council members to staff nurses regarding removal of duplicate alarms/monitoring systems, qualifications for utilizing alarms, process for adjusting alarms to the individual patient and importance of responding to alarms. Findings showed improved oncology patient satisfaction related to noise levels. HCAHPS results for 'Patients who reported that the area around their room was "Always" quiet at night' improved from quarter 4 of 2015 at 50.9% to 68% by Quarter 2 of 2016, after the action plan was implemented. A follow up survey for in 2017 revealed that 90.9% of staff surveyed were checking and adjusting settings on their monitor and 100% felt the single monitor was safer for patients. In addition, 71% of staff felt that alarm fatigue had been reduced post-interventions. Decreased alarm fatigue among nurses, increased patient satisfaction related to noise levels and improving the culture of safety for an oncology intermediate care unit were important outcomes of this collaborative initiative. Oncology nurses utilizing shared governance identified a possible safety concern and worked toward a solution. Empowering nurses to develop and implement patient safety initiatives required support from nursing leadership to promote oncology nursing excellence.

CAN WE GIVE YOU SOME TIPS? TAILORED INTERVENTIONS FOR PATIENT SAFETY ON A HEMATOPOIETIC STEM CELL TRANSPLANT (HSCT) UNIT

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92% of falls are preventable, including accidental falls (14%) and anticipated physical falls (78%). A fall in the hospital is a Hospital Acquired Condition (HAC). HSCT patients have unique risk factors, such as thrombocytopenia and metastatic disease affecting bones, putting them at risk for falls. Our previous fall assessment categorized patients into two groups, low and high risk. HSCT patients were consistently classified as high risk for falls. In 2016, our fall rate was 1.25 patients per month, 42% of which were falls with injury. The multidisciplinary team recognized the need to reduce falls by implementing the hospital-wide initiative, evidence-based intervention called Fall TIPS (Tailored Intervention for Patient Safety). Our goal was to reduce falls by 15% within 6 months of implementing Fall TIPS on a 16-bed in-patient HSCT unit in an academic medical center. Fall TIPS is a validated three-step process: 1) Morse fall risk assessment focusing on modifiable risk factors; 2) individualized tailored fall prevention strategy; and 3) consistent implementation. Nurses completed an e-learning module prior to implementation. TIPS consisted of a bed sign posted inside the patient room with tailored, simple visual intervention icons, and patient educational materials. Unit fall champions performed monthly Fall TIPS compliance audits, fostered team communication and engagement, and sought opportunity for improvement. Before our intervention, January 2016 to January 2017, the fall rate was 1.46 patients per month; 46% were falls with injury. During the intervention period, February 2017 to September 2017, the fall rate was 1.12 patients per month and 0 falls with injury. Following the intervention, fall rate decreased by 23.3% and there was a 100% improvement in falls with injury. Limitations included staff not posting or updating bedside signage and limited availability of non-English languages. We utilized Fall TIPS to reduce falls and improve patient safety by focusing on modifiable risk factors, tailored inventions, and communication tools for patients and staff. We are working on expanding available language options in the future. Oncology nurses play a pivotal role in assessment, intervention, and education of patients and their families. To effectively prevent falls, nurses and the multidisciplinary team should proactively and consistently implement the individualized patient interventions.

LEADERSHIP/MANAGEMENT/EDUCATION

A PILOT STUDY: STANDARDIZED PATIENT SIMULATION AS AN ACTIVE LEARNING STRATEGY IN ONCOLOGY SYMPTOM MANAGEMENT

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New graduate nurses lack the specialty knowledge and skills necessary to provide effective symptom management to oncology patients. Nurse educators are challenged to develop active learning strategies that facilitate the transfer of theory-based principles to practice. No previous researchers have examined the effectiveness of a simulation-based learning experience using standardized patients (SP simulation) to facilitate student learning of oncology symptom management principles taught in the classroom to practice. The purpose of this pilot study was to evaluate the effectiveness of SP simulation in enhancing nursing students' ability to apply evidence-based symptom management principles gained in theory-based learning sessions to oncology practice. A longitudinal, mixed-methods design was used to conduct this pilot study at a Catholic university in the Northeastern United States. A convenience sample of nine baccalaureate nursing students enrolled in an oncology symptom management seminar participated in two 20 minute SP simulation scenarios after attending five weeks of theory-based learning sessions. One scenario focused on a female patient with breast cancer undergoing radiation therapy. The second scenario portrayed a male patient with colorectal cancer receiving chemotherapy. A researcher developed survey was used to measure students' knowledge, confidence, and self-reported competence in oncology symptom management. The National League for Nursing's Student Satisfaction and Self-Confidence in Learning Instrument was used to measure student satisfaction and self-confidence in learning with SP simulation. Data collection occurred at three time points: pre-learning sessions, pre-simulations, and/or post-simulations. Quantitative data were analyzed using descriptive statistics and Repeated Measures Analysis of Variance. Qualitative responses to open-ended questions were analyzed using conventional content analysis. There was a significant increase in student self-perceived competence ($p=0.001$) and confidence ($p=0.001$) in oncology symptom management. Mean knowledge scores increased over time; however this increase in scores was not significant ($p = 0.345$). Participants reported a high-level of satisfaction with and confidence in learning with SP simulation. Qualitative themes identified included: realistic application, enjoyable and helpful, and suggestions for improvement. This was the first study to examine the effectiveness of SP simulation in enhancing nursing students' ability to apply oncology symptom management principles learned in the classroom to practice. While further research is warranted, SP simulation holds promise to enhance nursing students' acquisition of oncology symptom management principles.

STANDARDIZING EXCELLENCE: VALIDATING CHEMOTHERAPY ADMINISTRATION COMPETENCE THROUGH THE USE OF SIMULATION

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Validation of chemotherapy administration competence is vital to ensure patients receive safe, high quality care. Previously, staff completed this competency on individual patients with different drug regimens and different evaluators leading to poor inter-rater reliability. The new process incorporated the use of a state-of-the-art simulation center to provide a controlled environment and standard patient scenario focusing on administration of intravenous chemotherapy via secondary infusion and IV push. The purpose of this project was to implement a standardized process across the Cancer Service Line for validating chemotherapy administration competence using simulation. The Clinical Nurse Educator and Clinical Nurse Specialist for each infusion area partnered with the Simulation Center staff to create a realistic simulation using a standardized patient scenario, electronic medical record charting, clinical environment and equipment. Nurses were separated into inpatient and outpatient groups and assigned a chemotherapy regimen frequently seen in their work area. A competency checklist was created which documented every step of the administration process and highlighted essential items that would trigger an automatic failure if missed or done incorrectly. Clinical experts were present to assess each participant's performance. Successful completion was achieved by demonstrating 80% of the competency steps without cues. 263 nurses participated in this competency simulation. 262 nurses completed it successfully and one nurse needed remediation. A survey was sent to 263 nurses to gain an understanding of their perceptions of this simulation. We are currently awaiting survey results. The standardized process allowed staff to showcase their competence with chemotherapy administration and highlighted discrepancies in practice across the Cancer Service Line. Discrepancies noted included variations in the personal protective equipment used and safe practices regarding connecting and disconnecting IV tubing. By standardizing this competency using simulation, there was less variation in the way chemotherapy administration competence was evaluated which increased the reliability of the competency. Although this simulation required time and resources to create, it will be easily replicated in future years. The standardized environment and patient scenario will allow future competency assessments to focus on different key elements of chemotherapy administration (e.g., different routes of administration, vesicant administration or administration of highly reactive drugs) depending on which drug regimen is simulated. Practice discrepancies will be logged as educational opportunities.

FILLING IN THE GAPS OF CHEMOTHERAPY EDUCATION: CREATION OF A CHEMOTHERAPY SIMULATION CLASS

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Intensive chemotherapy education and training is required to ensure nurse competency and safety in chemotherapy verification and administration. With implementation of the Oncology Nursing Society's (ONS) Chemotherapy/Biotherapy Certificate Course as mandatory training for oncology nurses, education gaps were identified related to institution policies and procedures and hands on training with specific chemotherapy tubing and documentation. It was determined that additional education and hands on training was needed to ensure competency of nurses administering chemotherapy. An Oncology Nurse Educator and Oncology Clinical Nurse Specialists created a classroom simulation course to fill gaps in chemotherapy education specific to the institution's chemotherapy policies, procedures, documentation and materials utilized in chemotherapy verification and administration. A 4 hour chemotherapy class was developed for all new oncology nurses to attend. Class content includes education about specific hospital policies and procedures of chemotherapy verification and administration presented through lecture and simulation. Nurses were given the opportunity to practice electronic documentation, set up primary and secondary closed system chemotherapy tubing, and simulate administration of IV push chemotherapy. Chemotherapy champions were identified on oncology units to provide this education with support from the Oncology Nurse Educator. These champions also serve as a resource for nurses on their units if chemotherapy questions arise. From 2016 through 2017, 78 nurses attended the course and completed an evaluation with an overall rating of the program at 4.8/5. Additional feedback demonstrated more confidence in administering chemotherapy after the course. As more institutions adopt the ONS Chemotherapy/Biotherapy course as required chemotherapy education, gaps in education around individual institution policy and procedure need to be filled to ensure nurse competency in verification and administration of chemotherapy. The creation of a chemotherapy simulation class is one way of filling these education gaps and preparing nurses to safely administer chemotherapy. The chemotherapy simulation class expands on the content provided by the ONS Chemotherapy/Biotherapy course ensuring that nurses receive adequate training in universal chemotherapy standards as well as in institution specific policies and procedures. Possible expansion of this course for experienced nurses could help meet ongoing education and competency needs in addressing institution practice changes, new chemotherapy agents, and high risk or safety issues around chemotherapy.

IMPROVING CHEMOTHERAPY SAFETY THROUGH DEVELOPMENT OF AN INNOVATIVE ANNUAL CHEMOTHERAPY EDUCATION PROGRAM

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In the current health care environment, oncology nurses face significant challenges with ensuring safe administration and monitoring during and after chemotherapy administration. Oncology nurses must be knowledgeable on many standard therapies but also newly approved treatments and constantly evolving clinical trials. In an attempt to improve chemotherapy safety, the American Society of Clinical Oncology (ASCO) and Oncology Nursing Society (ONS) published an update to chemotherapy administration safety standards in 2016. To meet the standard of providing at least annual ongoing continuing education, one large academic medical center developed a new structure for formal annual education for in-patient nurses administering chemotherapy. An oncology Clinical Nurse Specialist (CNS), Oncology Nurse Educator, and an experienced oncology nurse collaborated to develop a strategy to systematically address chemotherapy specific educational needs on an annual basis. A need to provide a structured and systematic method for annual chemotherapy education was recognized and the decision was made to create an online module to meet this need. This module is intended to be updated annually but contains three consistent topics. Case studies were developed to describe these areas of focus: frequently reported errors or near misses, high risk and low volume skills, and a newly approved therapy. For the first case study, two fiscal years of event reports were reviewed. Oral chemotherapy was determined to be an area that warranted further education, both on current institutional policy and safe handling. The second case study focused on the high risk process of vesicant administration and reviewed current institutional guidelines and available resources. The third case study was around a patient receiving Pembrolizumab, covering this new therapy and nursing considerations for administration and monitoring. The course was assigned via an online platform in August 2017 to two hundred eighty-four chemotherapy certified nurses with a mandatory due date in November 2017. As institutions assess their current state in comparison to the ASCO/ONS chemotherapy administration safety standards, an online educational module structured into institutional themes and case studies is an effective method of providing annual education. The online education module reviewing themes using case studies is an innovative way to provide annual education in a consistent manner to chemotherapy certified nurses that meets ongoing changing educational needs.

BENEFITS OF AN ADAPTED COHORT MODEL FOR UNIT ONBOARDING

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An inpatient Hematology/Oncology and Bone Marrow Transplant unit with high registered nurse (RN) vacancy rates, and nurse satisfaction below national benchmarks, had grown accustomed to poor retention. The use of an adapted model for onboarding of cohorts will be discussed, including outcomes leading to improved vacancy, retention and cost. Daily struggles stemming from the 28% vacancy rate drove our leadership team to focus on onboarding, orienting, and retention of engaged staff nurses. With a traditional onboarding model, staff nurses were being hired on a monthly basis. This led to barriers in standardizing onboarding and orientation best practices. Based on the Communities of Practice theory, an emphasis on the social element of group learning was explored. The adapted model approaches onboarding and orientation as a team experience for incoming nurses, appealing to the growing millennial population, while providing unique benefits for educational opportunities and social activities. The nurse manager and nurse educator worked collaboratively to plan for two cohort groups of new hires throughout the calendar year, including 6-12 new registered nurses within each group. The unit education council worked in collaboration with the manager and educator dyad to reinvigorate unit preceptors and explain the transition from monthly new hires to the adapted cohort model. An orientation tracking tool was created for hand off communication between preceptors, to help maintain consistency. Since transitioning to the adapted cohort model, Registered Nurse (RN) vacancy has decreased from 28% to 0% and RN retention has sustained at 95% or higher for all nurses hired in the past 24 months. This retention has led to an annual unit based cost savings of $123,782. Identified Professional Practice Gap: High nurse vacancy and poor retention is both costly and a significant source of burn-out for NPD practitioners and other nurse leaders alike. Addressing the needs of hospital units with high vacancy, while also considering the expectations of the millennial population, requires strategic methods and planning. Educators and leaders will challenge their traditional process for recruitment and retention by considering innovative methods for onboarding that increase efficiency and nurse engagement, particularly targeting the expectations of the millennial population.

GIVING OLDER CANCER PATIENTS THEIR VOICE AND STRENGTH BACK THROUGH EMPOWERING NURSES TO PERFORM GERIATRIC ASSESSMENTS

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In 2017, there will be approximately 800,000 new older cancer patients. Older frail cancer patients are at highest risk for surgical complications and chemotherapy toxicity compared to younger fit patients. Geriatric assessment (GA) helps to identify those that are fit versus frail and aids in treatment decision making. Oncology nurses may not have the necessary skill set or knowledge to assess/address aging-related impairments. We developed a novel tool named electronic Rapid Fitness Assessment (eRFA): a web-based GA to systematically capture patient reported data by using validated tools on the GA. Nurses perform non patient reported components of the eRFA (Timed Up and Go test and MiniCog™). eRFA provides baseline (objective and subjective) assessments of older patients and identifies areas of deficit so early interventions can be implemented to help patients get through cancer treatment. The purpose of our intervention was to empower nurses to perform the eRFA. To expand eRFA to other oncology clinics our intervention included education of oncology nurses on GA and how to complete the eRFA. Educational lectures were provided at oncology nursing service specific meetings and small groups to empower nurses with the skills and tools to administer the eRFA. To build on this knowledge, nurses were invited to attend the Geriatric Nursing Education day which is a full day of learning from the multidisciplinary team offering CEU credits. A resource list and additional remote support were also provided. Since 2016, the eRFA expanded outside geriatric clinics to Thoracic surgery and Bone marrow transplant (BMT) clinics as routine care. There was overall positive verbal feedback from oncology nurses with constructive feedback on assessment. Thoracic surgery and BMT clinics completed eRFA on more than 270 patients. There were a total of 3 educational lectures/small groups with attendance of 2–12 nurses per meeting. Biannual Geriatric Nursing Education days had attendance of 60-90 nurses. Nurses were able to successfully perform geriatric assessments. Proficiency was assessed through observation during educational events. Nurses play a key role in caring for older cancer patients. Empowering oncology nurses through geriatric education facilitates implementation of GA in oncology clinics and may improve outcomes. Innovative efforts such as web-based GA provide more holistic assessments of older cancer patients.

SURVIVING AND THRIVING: INTEGRATING A RESILIENCY THREAD INTO AN ONCOLOGY NURSE RESIDENCY CURRICULUM

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The nursing shortage is an ongoing issue that is anticipated to intensify. It is predicted that by 2025, this shortage will be more than twice as large as any nurse shortage experienced since the 1960s. In addition, new-graduate nurses leave hospitals at a rate of 17% to 65% within the first employment year. Nurse retention is particularly an issue within subspecialties such as oncology, where nurses face a unique set of challenges including treatment complications, symptom management and end-of-life care. In addition, concerns related to compassion fatigue influence the oncology nurse's physical and emotional wellbeing and can lead to burnout and attrition. Research suggests that building personal resilience is a strategy for bouncing back after difficult experiences in the workplace and should be incorporated into nursing education. The Huntsman Oncology Nurse Residency (HONR) is a 12-month program at Huntsman Cancer Institute. Through oncology-specific didactic instruction, it provides new graduate nurses with tools and resources to be successful in their first year of clinical practice. We purposefully threaded key resiliency-focused topics throughout this curriculum such as mindfulness, managing emotional contagion, and over-identification. The purpose of this intervention is to assist new graduates in developing personal resiliency skills that will enable them to cope while meeting challenges inherent to the nature of their work in oncology nursing. We took a proactive approach as opposed to focusing on reactionary interventions. The Professional Quality of Life Scale (ProQOL) is a tool commonly used to measure compassion fatigue. Sub-scales include compassion satisfaction, burnout and secondary traumatic stress. Nurse residents completed the ProQOL survey at baseline, at 6 months, and at 12 months. Preliminary data indicated that scores related to the sub-scales improved over the course of the residency year. Changes in burnout scores were statistically significant at $p < 0.0001$. Resiliency training was effective to decrease rates of compassion fatigue and risk for burnout. Based on learner feedback, concepts will continue to be threaded throughout the curriculum with additional resiliency-focused workshops. Nurse retention will continue to be measured at 18 and 24 months. Moving forward, we expect to see new graduate oncology nurses fortified with resiliency and the ability to face inevitable challenges with strength and adaptability.

IMPLEMENTING 24/7 ACCESS FOR ACUTE ONCOLOGY OUTPATIENTS

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Patients with cancer receive increasingly more complex treatment regimens, requiring intravenous medications necessitating strict adherence to prescribed schedules that minimize toxicities and maximize efficacy. They often require ambulatory visits for intravenous hydration and transfusion support because of treatment intensity. Care is often needed beyond the traditional hours and days of a busy academic outpatient setting. The Oncology Care Unit (OCU) is designed to deliver high quality care that is proactive and addresses symptom management with safe, timely, convenient access to services. OCU provides a specialized resource for the oncology program that evaluates outpatients with urgent medical needs and supports interventions that decrease Emergency Department (ED) and inpatient admissions. The goal of the OCU is to manage treatment sequelae in a timely manner while decreasing the risk of exposing immunocompromised patients to an infection. The OCU serves as an extension of the outpatient infusion area ensuring high quality compassionate care to oncology patients. Phase 1 of this project utilizes a telephone triage system that decreases avoidable re-admissions and assesses appropriate referrals to this 6 bed, 12 hours a day, 7 days a week, NP run unit. Development and Implementation of Policies and Standard Operating Procedures (SOP's) to guide patient selection, clinical nursing oversight, and evening and weekend physician coverage were developed. Discussion between the Infusion Treatment Center and the OCU focuses on patient assessment, treatment sequelae, needed therapies or a bridge to admission that bypasses the ED. The OCU utilizes the triage process to provide bi-directional, closed-loop communication to members of the interdisciplinary oncology team. Patient evaluation and clinical staffing is determined by NP triage. The unit opened in May 2017 and has served over 800 patients to date. Patient data is collected and reviewed weekly by the clinical leadership team to determine patient selection trends, diagnoses and patient disposition following a visit to the OCU. Hours of operation and patient selection will be evaluated throughout the first phase of the unit's opening. Patient satisfaction scores are observed through RateMyHospital®. Nurse Practitioners provide oversight and execute clinical decisions regarding suitable admission to the OCU, inpatient and the ED. An Epic documentation template was developed to standardize patient evaluation and documentation.

CREATION OF A MULTIDISCIPLINARY LUNG NODULE CENTER: AN INNOVATIVE CARE MODEL FOR HIGH-RISK LUNG NODULES

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Lung cancer remains the second most commonly diagnosed malignancy and the number one cause of mortality due to cancer. The potential benefits of lung cancer screening cannot be underestimated. Identification of high risk individuals who meet criteria for low dose CT (LDCT) screening is critical to early diagnosis and prompt treatment. As a result of LDCT screening, nodules are often found, and assessment and management can be challenging and complex for the clinical care team. In an effort to foster a more disciplined approach to nodule management, the oncology team formed the Lung Program Executive Committee (LPEC) aimed at establishing a designated Lung Nodule Center (LNC) within the cancer center. Using evidenced based strategies, the team successfully developed and implemented a multidisciplinary model at their institution. The approach to the formation of this center was multi-faceted and focused on the development, integration and promotion of evidenced based guidelines and algorithms for high risk lung nodules for use in clinical practice. The LPEC created a multidisciplinary care conference which included pulmonologists, thoracic surgeons, radiation/medical oncologists, pathologists, radiologists, nurses, and tumor registrars who discussed the cases. The patients discussed were subsequently evaluated the same day in the center by the pulmonologists and thoracic surgeons. This model included a dedicated nurse navigator who collaborated with the physicians and office staff to streamline appointments, and support the care conference and patient visits. This model also included on-site access to tobacco cessation counseling, pulmonary function tests, and fast tracking for cardiac clearance to expedite the turn around time for scheduling pulmonary interventions and/or surgery for patients. The LPEC developed customized patient education materials about lung nodules and follow up care, a patient satisfaction survey and quality metrics for tracking outcomes. An intense marketing plan was implemented and included a recognition program for physician practices that referred and supported the LNC. This innovative model demonstrates the collaborative efforts of the cancer care team to establish a Lung Program Executive Committee and a designated Lung Nodule Center to effectively manage patients with high risk lung nodules. Outcomes from this multidisciplinary program include: adoption of evidence based algorithms for patient management; positive patient satisfaction scores, and reduced turn around times for abnormal nodule findings to patient evaluation and subsequent pulmonary procedures/surgery.

TELEHEALTH TECHNOLOGY REACHES HOMELESS WITH CANCER RISK REDUCTION EDUCATION

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The homeless are identified as a vulnerable population, at risk for many cancers, and underserved in the area of health education. The Spectrum Health Cancer Center was posed with the question—how do we bridge that gap? Our answer was the implementation of the "Knock Out Cancer" program utilizing oncology nurses and our state of the art telehealth technology to meet with guests at the Mel Trotter homeless shelter via two large computer monitors, one at Mel Trotter and one at Spectrum Health's Cancer Center. The purpose of this project was to provide cancer prevention education and screening recommendations to the homeless in our community through an innovative solution utilizing telehealth technology in partnership with Mel Trotter Ministries and the Spectrum Health Cancer Center in Grand Rapids, Michigan. A flier was created to explain the program and services offered. The length of the appointment was set at a 30 minutes allowing two guests to be seen each week. Oncology nurses at Spectrum Health developed a script for the visits, which incorporated cancer risk reduction guidelines from the American Cancer Society. The nurses also created a log to record the length of visits and services provided. A room was designated at each site to conduct visits and house the equipment. To date 39 guests have received cancer screening guideline and cancer risk reduction education in the categories of: Diet/Nutrition, Exercise/Physical activity, Family cancer history, Smoking cessation, Limiting alcohol, Weight maintenance/BMI, and the importance of knowing their bodies so they can report changes. The goal with each visit is to empower guests to take ownership of their health and thus reduce their risk of getting cancer in the process. The utilization of telehealth technology to reach the homeless with cancer prevention education has proved successful at Spectrum Health. Over 50% of guests verbally indicated they would make a change in their current lifestyle or health behaviors. Most have stated the information provided was helpful. Using current infrastructure and partnering with already effective community based organizations are effective strategies to provide cancer prevention education and health education to reach more individuals in the communities we serve. Engaging the homeless is difficult, yet our approach is working. Virtual education is feasible to use in underserved populations.

24-HOUR ONCOLOGY CLINIC—FROM CONCEPT TO REALITY

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Patients undergoing active cancer treatment experience a wide variety of side effects. Oncology patients have access to outpatient clinics and infusion services during routine business hours. Patient's experiencing complications outside of those hours were previously directed to utilize the emergency department (ED), or wait until the next business day for care. Inability to access oncology-specific care 24-hours a day led to increased utilization of ED services by oncology patients. This overutilization caused increased cost of care for the patient, while decreasing the ability to provide oncology-specific care. The purpose is to describe clinical and operational development of a

24-hour outpatient oncology symptom management clinic in a large, academic medical center. Details of the clinic's physical design, staffing model, IT development, and billing infrastructure will be shared. Information on visit criteria, along with communication plans for both internal and external customers, will be discussed. The clinic provides lab draws, fluid and electrolyte infusions, blood product transfusions, and radiology services including CT scans. Common patient concerns treated the clinic include nausea, pain, and dehydration. The clinic offers four patient treatment areas immediately adjacent to the inpatient oncology unit, staffed by oncology nurses trained to both inpatient and outpatient care environments. The clinic provider is an experienced oncology Advanced Practice Provider, with medical oversight an attending oncology physician. An in-depth review of ED utilization was performed prior to the creation of the clinic, specifically looking at arrival patterns for oncology patients, the types of diagnostic tests ordered, and admission rates. Current analysis showed an 10.7% decrease in ED utilization when comparing January–June 2016 versus January–June 2017. This decrease in ED utilization translates to a decrease in direct cost to the patient. Most recent evaluation of direct patient cost of diagnostics such as labs, imaging, and EKG, and have shown approximately a $1500–2500 decrease in direct patient cost. Clinic volumes grew quickly and average 130–140 patient visits per month. We are continually exploring opportunities to maximize volume. Patient satisfaction is measured via CG-CAHPS and currently has a top box of 92%, with comments showing high satisfaction in the use of the clinic. In addition, outcome metrics related to oncology readmissions, ED utilization, time to antibiotics, and clinic admission rates may be discussed.

ONCOLOGY NURSES' SELF-RATING OF SKILL, PREPARATION, AND COMFORT LEVEL IN CARING FOR OLDER ADULTS

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The number of older adults with cancer is expected to dramatically increase with the aging population. Despite the need for nurses trained in geriatric oncology, the proportion of nurses with specialized education/experience in geriatrics is low. A national pilot survey of oncology nurses highlighted a critical gap in gerontology knowledge. The objective of this R25 is to impact quality of care for older adults with cancer by improving the skill, organizational preparation, and comfort level of oncology nurses in geriatric care through a national, multidisciplinary, interactive, targeted curriculum in geriatric oncology for nurses. We developed a 2.5-day geriatric-education conference; designed for oncology nurse teams. We asked each team to rate their level of skill (How skilled do you feel in the care of older adults?), preparation (How prepared is your organization to care for older adults?), and comfort in managing geriatric syndromes on a scale of 0–10 (0 = Not at all; 10 = Very much). Baseline data was collected via emailed questionnaire after their acceptance into the program and follow up data at 12 months after the conference. Linear mixed modeling, taking into consideration the correlation of repeated measurements within teams, was used to examine the changes from baseline to 12 month post conference. A total of 34 teams of oncology nurses attended the course in 2016. Each team consisted of a manager, an educator, and a direct care nurse. At 12 months post conference, there are significant improvements in all three areas. In terms of how well prepared your organization is to care for the older patient with cancer, at 12 months the level of preparedness increased from 6.12 to 6.93 ($p=0.02$). The self-rated level of skill in caring for older adults with cancer increased from 6.15 at baseline to 7.92 at 12 months ($p<0.001$). Their comfort level in managing geriatric syndromes increased the most with 5.55 at baseline and 7.47 at 12 months post conference ($p<0.001$). We developed a national curriculum in geriatric oncology and assessed the effectiveness with oncology nurses' self-rated levels of skill, organizational preparation, and comfort level with geriatric syndromes. The results demonstrated that nurses felt more skilled, their organizations more prepared, and they experienced a greater comfort level in managing geriatric syndromes after attending the conference.

BYPASSING THE SICU: FREE FLAPS TO FLOOR RESULTS IN IMPROVED PATIENT OUTCOMES

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At Smilow Cancer Hospital, a National Cancer Institute, patients undergoing free tissue flaps and composite resections for cancers of the head and neck historically had a 24–48 hour postoperative stay in the surgical intensive care unit (SICU) then transferred to the Surgical Oncology inpatient unit for the remainder of the post-operative period. Although head and neck reconstruction is an extensive surgical procedure, many of the patients required ICU level care for frequent monitoring of vital signs and hourly assessment of flap perfusion. Specialized nursing care on the surgical oncology unit created an opportunity to bypass the SICU and transition patients directly from the post-anesthesia care unit (PACU) to the Surgical Oncology Unit. The purpose of this project was to reduce length of stay, post-operative complications and readmission rates of patients with head and neck cancer undergoing free flap surgery by incorporating early ambulation and expert free flap and tracheostomy nursing care on a surgical oncology unit. An interdisciplinary team was convened to identify otherwise healthy patients undergoing free tissue flap reconstructive surgery and/or composite resection as candidates to bypass the SICU and receive all postoperative care on the surgical oncology unit. A standard of nursing care was established. The reconstructive surgeon educated unit staff on the free tissue flap pathway including post-operative care. Nurses observed patient care in the SICU prior to caring for the first patient. A standardized handoff from PACU to Surgical Oncology was created and education provided to the PACU prior to the first patient in May of 2015. Data was collected over a two year period including length of stay and post-operative complications such as return to ICU, return to the operating room, and readmission rates. The length of stay has been reduced by 2 hospital days and total direct care costs have been reduced by 50%. Shortened length of stay reduces the incidence of hospital acquired infections and improves patient outcomes. Overall the change in practice improved the teamwork on the unit, which was an unexpected outcome but a highly desirable one. Future development of guidelines for patient selection to bypass the SICU will be based on data review of those patients who went to ICU after coming to Surgical Oncology or returned to the operating room.

IMPROVING VACCINATION RATES FOR INFLUENZA AND PNEUMOCOCCUS THROUGH A NURSE DRIVEN PROTOCOL

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Streptococcus pneumoniae is the leading cause of pneumonia; majority of the cases of invasive pneumococcal disease (IPD) occur in patients with high-risk conditions such as cancer. Pneumococcal vaccines are safe and contribute to reduce burden of IPD—even in immunocompromised patients. Historically, patients diagnosed with IPD at this center have over 90% rate of not receiving the pneumococcal vaccine. People with cancer can develop serious and fatal complications from influenza. In addition, delays in care may occur as patients undergoing chemotherapy recover from this infection. IPD and influenza are vaccine preventable diseases. The Center for Disease Control and Prevention's (2012) Advisory Committee on Immunization Practices recommends that persons of all ages with high risk conditions, including cancer, receive both vaccines. To increase vaccination with pneumococcal and influenza vaccines among outpatients at a large tertiary care cancer center. The process expanded upon an existing inpatient protocol whereby orders for vaccines automatically generate based upon an eligibility assessment completed electronically in nursing clinical documentation. Due to concerns about the impact of the change on patient throughput in clinic, we piloted the protocol in two outpatient locations from November 2016 through May 2017. The interdisciplinary task force included representatives from Nursing, Nursing Informatics, Pharmacy, Infection control, Quality and Safety, and Administration. Modifications were built into the outpatient nursing clinical documentation to support the change. The following metrics were assessed: number of vaccine doses administered, clinic room in and room out times, and time to pharmacy verification of order. Successful implementation of this nurse-driven protocol resulted in a significant increase in vaccinations during the pilot compared to the same time period in the year prior without a significant difference in the volume of patient visits. Influenza vaccinations increased from 762 pre to 1504 vaccinations post (97%). Pneumococcal vaccinations increased from 229 pre to 1797 post (684%). Based on the success of the pilot, all outpatient locations will go live this year. Implementing a nurse driven protocol to perform vaccine assessment and administration improves vaccination uptake among patients. Targeted education on benefits and safety of vaccines among medical and nursing staff are effective strategies to improve vaccine acceptance. Electronic health records and related resources should be utilized to implement best clinical practices.

INTERNAL BENCHMARKING FOR OPTIMAL STAFFING IN AN INTEGRATED RADIATION ONCOLOGY PRACTICE

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Very little information is available to guide staffing decisions for Radiation Oncology nursing practice. The American Society for Radiation Oncology's (ASTRO) nursing guidelines simply state that a nurse must be available in each radiation oncology clinic. The American College of Radiation Oncology's (ACRO) guidelines recommend one full-time nurse for every 200–300 new patients seen in the practice per year. The Oncology Nursing Society does not have formal recommendations for radiation oncology nurse staffing. With many radiation oncology practices expanding services to include complex procedures, multifactorial care coordination and active symptom management, nursing support is more essential than ever. The purpose of this project was to document current staffing practices based on clinic visit types and to determine whether those data are useful benchmarks for nurse staffing decisions. Nursing activities for each designated visit type on the clinic schedule were reviewed and documented. The nursing activities were validated with front-line staff nurses. Activity times were assigned to each visit type and nursing workload hours were projected for each clinic on a daily basis. Additional "out-of-clinic" time was estimated for care coordination activities that usually are not completed while patients are in the clinic (telephone triage, patient referral to support services, and direct communication with additional care providers). The nursing activity times were projected weekly and compared to weekly nurse staffing levels. We successfully described the nursing workload for each clinic visit type, which had previously not been done to a detailed level. Projected staffing benchmarks based on clinic visit type activities were compared with scheduled nurse assignments. The majority of the clinics were appropriately staffed using the benchmark tool. We successfully adjusted projected over- and under-staffing by re-assigning nurses to alternate clinics. Optimal radiation oncology nurse staffing has not been adequately described in the literature. This project successfully developed internal staffing benchmarks for clinic visit types, including complex procedure areas. Benchmarks were developed to account for non-clinic based administrative activities that are essential for patient care coordination and efficient patient throughput. Benchmarking of nursing workload based on nursing activity times should be tested in additional clinics to validate assumptions and test for usefulness.

SCHEDULING TO ALL INFUSION LIMITS

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The Infusion Suite of the Norris Cotton Cancer Center at Dartmouth Hitchcock Medical Center in Lebanon, NH, provides infusion treatments to 40–65 patients each weekday. Infusion scheduling was previously guided by two factors: chair space and pharmacy dose preparation capabilities per hour, along with a maximum daily number of appointments. Frequently, one or more of these capacities was reached, hindering the ability to appropriately schedule additional patients. This caused increased patient wait times; secretary and provider frustration; and leadership fielding increased exception requests. Additionally, hourly nursing capacity was not considered, resulting in patient care delays and unmanageable nursing workloads. The goals of this work were to understand overall infusion capacity, identify existing opportunity, optimize all resources, and improve patient experience. The team used the Define, Measure, Analyze, Improve, and Control (DMAIC) method for process improvement. Time and motion study data was analyzed to understand nursing workflow and capacity. Recognizing that pharmacy's hourly limits had been developed prior to our current practice of pre-mixing chemotherapy for some patients, the definition of pharmacy capacity was also reconsidered. The team measured capability per hour per day for each of the three relevant factors (nursing, pharmacy, and chairs) and identified opportunities for additional appointments between 8am and 11am. Several pilots were run focusing on increasing the number of patients scheduled in the morning. Newly understood nursing capacity was integrated with pharmacy and chair capacities. Timeliness and nurse workload were monitored during each pilot. Sustained improvement results include 84% of patients receiving on-time treatment (increased from 77%) and 88% of patients finishing their treatments on time or early (increased from 83%). Staff feedback includes reduced frustration with scheduling patients and more manageable nurse workload. New scheduling guidelines that take into account chair space, pharmacy dose capacity, and nursing workload have been implemented and the arbitrary limit on daily number of appointments was removed. Further, overall capacity of the Infusion Suite has increased by 15–20% without adding chairs or pharmacy hoods.

END-OF-LIFE COMMUNICATION IN ONCOLOGY: NURSES' PERCEPTIONS, ATTITUDES, AND CHALLENGES

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In a retrospective analysis of patients with advanced cancer, nearly all received end-of-life (EOL) discussions—but half took place within 1 month of death. In some cases, clinicians felt that EOL discussions took away hope. However, evidence suggests that increased understanding of prognosis positively influences patients' EOL decisions. Patients who did not grasp the severity of their prognosis overestimated life expectancy and were 2.6 times more likely to choose life-extending treatments. Understanding the barriers and challenges for key stakeholders in EOL discussions is invaluable in taking steps toward improving these conversations. After an extensive literature review, a project was implemented at a major urban cancer hospital to educate outpatient oncology nurses on the wide-ranging issues surrounding EOL communication. The goal was to determine knowledge gaps among nurses and identify resources to facilitate EOL conversations with patients. A 40-minute didactic in-service with interactive discussion was held and 16 nurses participated. Content included literature on patient outcomes, barriers to EOL discussions, and best practices to address the needs of diverse populations. Survey results found that prior to the education session, nurses were uncertain if EOL conversations negatively impacted a patient's hope. However, after the education, they recognized that these conversations did not take away hope. Similarly, more nurses identified that they had a role in clarifying physician-stated prognosis and treatment options with patients after the education session. Lastly, and most significantly, the intervention improved knowledge of resources available to assist with EOL conversations within their institution and externally. Future education needs were also identified including strategies for overcoming communication barriers between physicians and meeting the needs of patients with diverse backgrounds. Final presentation will include program curriculum and review of pre/post survey data. The project emboldened many nurses to share shortcomings in EOL conversations they'd experienced with their own patients, and reasons for their reluctance to have these talks. This short educational intervention demonstrated positive outcomes for nurses and identified areas for future innovation without any cost. It could easily be replicated as an opportunity to identify staff needs and start the conversation about how to better meet patient needs around EOL. Such forward-thinking EOL initiatives could ultimately reduce moral distress for the nurse and positively impact the patient and family at the heart of patient-centered care.

ONCOLOGY NURSE'S PERCEIVED BURNOUT AND PERSPECTIVES ON THEIR RELATIONSHIPS WITH SERIOUSLY ILL PATIENTS

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Inpatient oncology nurses frequently care for patients near the end of life. Given increasing attention to risk of burnout and attrition in this setting, we explored nurses' level of burnout and in-depth perspectives on their relationships with seriously ill or dying patients. We conducted individual interviews with 24 registered nurses on an inpatient medical oncology unit at an academic medical center. Participants completed the 22-item Maslach Burnout Inventory-Human Services Survey. Using semi-structured interviews, we elicited RNs' reflections on their relationships with prior patients and families in their care. Using a framework approach, a multidisciplinary team met to develop a coding structure (Kappa =.80). Using an iterative approach, we identified themes related to the personal meaning of nurse relationships with patients and families. Nurses were 95.8% female and 95.8% non-Hispanic white and had a mean age of 32.7 years (SD=10.8 yrs). Median experience as RN was 4.0 years (range: 1.5–35.0 yrs). Regarding burnout, 20.9% (n=5) reported a moderate to high level of depersonalization; 66.4% (n=16) reported a moderate to high level of emotional exhaustion; and 100% (n=24) reported a moderate to high level of personal accomplishment. In interviews, RNs described 'good' or meaningful relationships with patients and families as highly intimate and transformative moments. These unique moments reflected cases in which RNs felt they were able to 1) facilitate patient/family processing of emotions and disclosure of treatment preferences that otherwise had been difficult to process or disclose; 2) provide highly-skilled patient-centered care to manage symptoms and reduce suffering; and/or 3) facilitate patient/family prognostic understanding and peace. RNs felt privileged to serve these roles. Memorable transformative moments helped to enrich RNs' professional identities and inspired them to continue their work caring for oncology patients. Inpatient oncology nurse-patient relationships serve a distinctive function for patient-centered care. These relationships may also foster RNs' sense of personal accomplishment, even in the setting of high emotional exhaustion. Results underscore the importance of supporting RNs in their unique role of forming relationships with patients/families, and coping with conditions that impede meaningful relationships from developing.

NURSING LEADERSHIP IN CLINICAL TRIALS EDUCATION—BUILDING A PATIENT-CENTERED PROGRAM TO OVERCOME ACCESSIBILITY BARRIERS

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Overall survival for some cancer diagnoses is significantly higher for patients participating in clinical trials versus those who do not. Fewer than 10% of patients with cancer join clinical trials, and only 20% of patients say their health care team discussed clinical trials with them. Major barriers to participation include: 1) lack of awareness by the health care team regarding available options; 2) limited clinical trial accessibility across cancer centers; and 3) patient misconceptions about clinical trials. As patient advocates and educators, nurses are essential to help patients overcome barriers to participation in clinical trials. A needs assessment, which included a literature review, environmental scan, survey of patients and caregivers, and a focus group with oncology nurses, was conducted. Results indicated: 1) a need for patient-friendly clinical trials support and resources; 2) existing programs and resources are limited in scope; and 3) nurses play a critical role in clinical trial enrollment. This assessment shaped the components of a new program to address this unmet need. Developed and led by nurses, a national patient advocacy organization launched a program in July 2017 to help patients with hematologic malignancies and disorders access clinical trials. This free program includes: 1) one-on-one telephone and email support from a masters-prepared nurse; 2) easy-to-use web-based tool with plain language trial descriptions adapted from www.clinicaltrials.gov; and 3) clinical trial patient education resources for nurses. Serving as patient advocates and educators, nurses applied clinical judgement, best practices in health literacy, and knowledge of the patient experience ensuring the program components were clinically accurate, easy to use, and relevant for patients. Ongoing engagement between patients and nurses enhances program effectiveness. A survey is administered to patients participating in the program measuring overall satisfaction with the program, clarity of information provided, and preparedness to discuss trials with their health care team. Oncology nurses from cancer centers throughout the U.S. serve in a program advisory role providing feedback and guidance to improve the program's patient-centeredness. Nursing leadership in patient advocacy and education helps overcome barriers to clinical trial participation. This program provides tools and personalized support to make clinical trial participation a reality for patients with hematologic malignancies and disorders, demonstrating how oncology nursing roles and expertise can make a measureable impact on patient health outcomes.

ONCOLOGY RESEARCH THRIVES WITH DEDICATED CLINICAL RESEARCH NURSING STAFF

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Successfully participating in oncology clinical trials by clinical sites requires many resources, of which, the research nursing staff is one of the key components. Oncology specialized nurses have long been established as a critical component of the care team, however the unique subset of clinical research oncology nurses is under recognized and therefore underutilized. A dedicated team of registered nurses (RNs) and advanced practice nurses (APNs) is able to provide focused patient care, accurately identify and manage adverse events (AEs), ensure protocol adherence, and serve as a resource on clinical trials for both patients and providers. A research nursing core has been developed at Herbert Irving Comprehensive Cancer Center (HICCC) at Columbia University Medical Center (CUMC) leading to improved care and hope for oncology patients through clinical trial participation. Since the research nursing core's creation, both therapeutic clinical trial enrollment and HICCC's ability to open more trials has continually increased, allowing for greater access to the community in the search to find a cure for cancer. From 2011 to 2016 enrollment on therapeutic clinical trials grew 45% from 287 to 417 participants correlating with the expansion of the research nursing core from three dedicated nurses in 2010 to over 23 full-time RNs and APNs in 2017. The research nursing core utilizes an outpatient 12-hour day schedule, standardized research nursing documentation, and a disease group team approach within the research department to be efficient and precise in their care. This approach has proven effective and we propose that it be used as a model to enhance clinical trial programs at other institutions.

DEVELOPMENT OF AN ENDURING EDUCATION SHAREPOINT SITE TO PROVIDE FREE CONTINUING NURSING EDUCATION TO ONCOLOGY NURSES AT UPMC HILLMAN CANCER CENTER

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The purpose of developing the "Enduring Education SharePoint Site" is to provide oncology nurses with 24/7 access to on-demand, self-paced education modules with free continuing education credit. This flexible format of education permits participants to balance continuing education completion with their busy schedules and work assignments. Nurses are required to obtain continuing educational credits (CEUs) to maintain their licensure. In addition, nurses who hold oncology certification need to obtain continuing education specific to oncology. Historically, nurses at UPMC Hillman Cancer Center (UPMC HCC) have difficulty finding time to attend sessions offered by the professional education department due to their work assignments, time restraints, and geographic location. The UPMC HCC network includes 44 locations in central and western PA, eastern Ohio, and Europe. The large geographic area makes it difficult for oncology educators to provide continuing education to nurses throughout the network. A needs assessment conducted in 2015 and indicated that over 40% of employees would prefer self-learning modules. In addition, over 37% indicated they would prefer web-based learning. A literature review was performed and the results indicated numerous benefits for on-demand, self-paced enduring education among nurses. The education department explored various options and platforms to provide enduring education to the staff. The SharePoint format was selected due to its accessibility and current use among the company. The education department and clinical experts created education modules applicable to oncology nursing. The Enduring Education SharePoint Site (EESS) was launched in July of 2016. The EESS currently has a total of twenty modules covering a wide range of topics and continues to grow. Modules can be completed during work or at home. They can be started, paused, and completed on a different date. Individual Learning Needs Assessment categories have been assigned to each module allowing nurses to easily identify continuing education that will meet their recertification requirements. Upon completion of each module, nurses are required to complete an evaluation to assess speakers, content, delivery of education, and impact on professional practice. This type of education supersedes distance and time allowing for standardized education for health care organizations that have large numerical and/or geographical networks. This format complements existing learning options and has the potential to impact nurse retention and foster cultures of growth and quality.

SCALING THE IMPOSSIBLE: STANDARDIZING EDUCATION THROUGH A MULTISTATE ONCOLOGY TRANSITION INTO PRACTICE PROGRAM

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Healthcare organizations struggle to obtain and retain high quality nurses in specialty clinical areas, such as oncology. Specialty Transition into Practice programs have demonstrated improved nursing engagement and reduced first-year turnover, resulting in improved clinical outcomes and financial performance. Our large, multi-state organization set off to develop an evidence-based curriculum for residents and fellows transitioning into oncology nursing that could be standardized and implemented at each of our hospitals. Our aim was to provide the same quality of education and support, regardless of hospital size and available resources. The Oncology Transition into Practice Program offers the opportunity for all our hospitals to secure, support and sustain a prepared and engaged oncology workforce locally. The program objective is to reduce 1st year oncology nurse turnover by 50% and increase learner confidence by 10% over the first year of oncology nursing practice. Program development employed content expert collaboration from each region across our health system. We chose a flipped-classroom model with selected ONS courses as the foundation. Collaborative, classroom time focuses on application to practice through peer-to-peer teaching and clinical simulation presented in an innovative learning model. An improved learner experience, by integrating interactive learning strategies, empowers nurses with a broad understanding of the scope and impact of oncology nursing. Oncology nursing certification standards were closely considered during development so that eligible learners will be encouraged to consider certification. Following development, the oncology curriculum was introduced to oncology leadership across 7 states and approximately 50 hospitals. Local facilitators have access to full curriculum and resources, including creative solutions for scaling implementation. They are provided support and ongoing consultation from the Oncology Program Manager. Additionally, oncology nurses and clinical experts have developed improved professional collaborations and networking across our healthcare system through this work. Program evaluation includes: RN experience, RN retention and financial outcomes, and learning gains. Our organization has used this model to develop additional specialty Transition into Practice Programs that have demonstrated a 10% increase in RN experience and a 62% reduction in 1st year turnover, resulting in $9.6M savings for the organization. While the Oncology Transition into Practice Program is in its early stages of implementation, we believe that we can predict similar data trends to those demonstrated in respective specialty tracts.

PROMOTING THE ROLE OF THE ONCOLOGY NURSE: DEVELOPMENT OF AN UNDERGRADUATE NURSING STUDENT ONCOLOGY INTERNSHIP

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Oncology is a growing specialty and oncology nurses are needed in a variety of cancer-related roles. However, the time spent in nursing schools teaching about oncology is often inadequate to prepare a nursing student for these roles. To address this deficit, as well as the need for oncology nurses in the field, an oncology internship was developed. The purpose of this project was to provide observation experiences in oncology nursing roles to students interested in oncology. The professional expectations and goals of participants before and after the internship was evaluated. Additionally, it was hoped the internship would serve as a recruitment mechanism for new oncology nurses. Four students were selected by the planning committee through an application process sent to local nursing schools. A four week internship was developed by oncology leadership and the education department. The framework developed grouped preceptors from multiple areas into theme weeks, to guide students through the cancer care continuum. Learning objectives were provided to preceptors and students. Students observed nurses in sixteen different roles as well as seminar days that included non-nursing support services. Pre-work was given in preparation for each experience and journals were completed at the end of each week. Evaluations using a Likert scale and open response were sent to preceptors, students and the referring schools. Feedback about the interactions with the planning committee and the content of each observation was also collected. Prior to the internship, three students were undecided on whether they intended to pursue a career in oncology. Post internship, all students stated they intended to pursue a career in oncology, that it broadened their knowledge of oncology nursing roles and that they had new perceptions of the specialty. One was disappointed in the limited hands on experience. The internship also served as a staffing recruitment tool, as three students planned to apply to the medical center after graduation. This internship gave students the opportunity to experience inpatient and outpatient cancer care. Providing this opportunity to students seemed to have a positive impact and captured their interest in oncology—molding nurses for a future career in oncology. The framework used to develop this internship could be translated to other hospitals to develop a similar offering.

ACHIEVING THE TRIPLE AIM: IMPLEMENTATION OF THE CLINICAL NURSE LEADER IN INPATIENT ONCOLOGY

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Healthcare organizations are increasingly challenged to achieve the Institute for Healthcare Improvement (IHI)'s Triple Aim of improving population health; improving patient outcomes and satisfaction; and decreasing cost. This work is especially difficult within oncology—the complex needs of oncology patients challenge traditional approaches to care management and force the healthcare team to drive outcomes, satisfaction, and cost savings in unique ways. To aid in the mission of achieving the Triple Aim on an oncology unit at a rural academic medical center, a new role, the Clinical Nurse Leader (CNL), was introduced. The purpose of this presentation is to describe the implementation and value of the CNL in oncology nursing. Careful planning on the part of the unit Nurse Manager (NM) laid the groundwork for the implementation of the CNL. Advocating for the role with all levels of hospital leadership, creating a budget neutral plan, and restructuring the unit leadership team opened the door for the first oncology CNL to be hired. The CNL, an experienced oncology nurse who possesses both advanced education and the emerging skills of leadership, project management, and teambuilding, worked directly with frontline staff and the unit operational leadership team to assess and analyze unit current practice standards. This collaboration enabled the CNL to prioritize early quality improvement work. Immediate projects included chemotherapy cost containment, Hospital Acquired Condition (HAC) reduction, and readmission reduction. Since the addition of the CNL, the oncology unit has transitioned outpatient chemotherapy to be fully implemented in the infusion clinic, leading to reduced cost of care. Quality outcomes for the unit continue to improve: the unit is 150 days CLABSI free, 45 days free from falls with injury, and 85 days free from C-Diff infections; evaluations of the CNL's ability to drive readmission reduction and patient satisfaction are both improving and ongoing. Through CNL essentials of skilled communication, lateral integration of patient care at the bedside, and displayed leadership skills within the microsystem, the CNL has amplified unit operations with added layers of expert nursing practice and quality improvement methods. The CNL not only has become a highly-relied upon member of the unit leadership team, but is also a unique factor in achieving the Triple Aim within the oncology population.

RESEARCH

EXPLORING THE EFFICACY OF AN ELECTRONIC SYMPTOM ASSESSMENT AND SELF-CARE INTERVENTION TO IMPROVE PHYSICAL FUNCTION IN INDIVIDUALS RECEIVING TAXANE AND PLATINUM-BASED CHEMOTHERAPY

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Impaired physical function due to chemotherapy-induced peripheral neuropathy (CIPN) symptoms may lead to diminished quality of life, lower personal productivity, and increased health care costs. However, even with the knowledge of the effects of CIPN symptoms on physical function, nurses infrequently assess and manage CIPN symptoms in practice. Interventions are needed that prioritize the early identification of CIPN symptoms in clinical practice in order to provide prompt treatment and/or referral to rehabilitation services to reduce CIPN symptom impact on physical function. The Electronic Self-Report Assessment–Cancer (ESRA-C), a web-based assessment and self-care intervention program, is known to improve overall symptom distress during active cancer therapies. The purpose of this project was to determine the efficacy of the ESRA-C program in improving physical function, current pain intensity, sensory/motor CIPN, fatigue, depression, and insomnia in individuals receiving neurotoxic chemotherapy. A secondary analysis of data from a randomized-controlled trial was conducted. The analytic sample (N=219) included adults with cancer beginning platinum and/or taxane-based chemotherapy regimens. Participants were randomized to receive 1) access to the ESRA-C program for symptom screening, communication coaching, self-care management instruction, and symptom tracking, or 2) routine electronic symptom screening during neurotoxic chemotherapy treatment. Prior to and after completion of neurotoxic chemotherapy, participants completed standardized measures of physical function, sensory/motor CIPN, fatigue, depression, pain intensity, and insomnia. End-of-study survey scores were compared between groups using analysis of covariance (ANCOVA) adjusting for select baseline covariates. Individuals randomized to receive the ESRA-C program experienced significant improvements in physical function (p=0.04, d=0.27) and depression (p=0.02, d=0.30) in comparison to those that received electronic symptom assessment alone, but otherwise, there were no differences between groups. ESRA-C program use significantly improved physical function in individuals receiving neurotoxic chemotherapy. An adequately powered, prospective study testing the ESRA-C intervention is needed to validate the findings and to determine mediators of physical function improvement in individuals receiving neurotoxic chemotherapy. Novel interventions are needed to improve the assessment and management of CIPN in clinical practice. With further testing, the ESRA-C program may be implemented as a tool to identify individuals with severe CIPN symptoms so that prompt management can be provided to mitigate worsening symptoms and subsequent reductions in physical function.

SERUM METABOLOME PROFILING OF CANCER-RELATED FATIGUE IN COLORECTAL CANCER SURVIVORS

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The prevalence of CRF was 41% in CRC survivors. There is however still no objective indicators for CRF available. On the other hand, metabolome can capture the dynamic physiological condition corresponding to the behavior, and might show the mechanisms of CRF. The purpose of this project was to explore biomarkers for cancer-related fatigue (CRF) in colorectal cancer (CRC) survivors. A longitudinal study design with two time points was used to recruit patients who completed treatments more than 3 months in Taipei. A structured questionnaire and serum sample were used to collect data. Liquid chromatography-mass spectrometry was used to perform the metabolomics profile analysis. Paired t-test was applied to identify significant metabolites for changing of CRF between 2 times. All significant metabolites were mapped into metabolic pathways using the Kyoto Encyclopedia of Genes and Genomes database. Totally, 56 patients with CRC participated in this study. The average end of treatment time at T0 and T1 were 23.63 (16.10) and 33.11 (15.52) months, respectively. Patients experienced mild level of CRF in two time points. Ketoleucine and Carnitine were identified as significant metabolites for CRF in CRC survivors. Ketoleucine which can inhibit effect on protein degradation in muscle, and Carnitine which is a substance that helps body turn fat into energy might be the biomarkers for CRF in CRC survivors. Healthcare provider should pay more attention on CRF issue in CRC survivors. Furthermore, more metabolomics of CRF study are suggested in future studies to confirm the role of Ketoleucine and Carnitine.

SYMPTOMS, FUNCTIONAL STATUS, AND QUALITY OF LIFE OF ADULTS WITH ACUTE LEUKEMIA DURING INDUCTION TREATMENT: A LONGITUDINAL EXAMINATION

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Appropriate and timely acute leukemia treatment of symptoms is essential for providing care, improving functional status and enhancing quality of life (QOL). There is limited research focused on the patient reported symptom experience and QOL in patients receiving treatment for acute leukemia, which makes it difficult for clinicians to identify patients at high risk of adverse health outcomes. The purpose was to examine longitudinal symptoms, functional status and QOL patterns of newly diagnosed adults with acute leukemia receiving induction chemotherapy to determine how patterns change over time during their hospitalization. A prospective, longitudinal study with weekly assessments between baseline and discharge assessed functional status (Timed Up and Go and Karnofsky Performance Status); PROMIS measures of physical and mental health, fatigue, anxiety, depression, sleep disturbance, and pain intensity and leukemia specific QOL (FACT-Leu). Data were analyzed using descriptive statistics, linear mixed modeling, and adaptive regression modeling methods. Fifty-five adults with acute leukemia were enrolled and 49 completed the assessments. The mean age was 53 years, and majority had a diagnosis of AML (72%). On average, the length of stay was 34.8 (SD 14.0) days. In standard linear mixed models, mental health and pain intensity did not change significantly. Physical health improved significantly (p=0.028) by 2.5 units. PROMIS Fatigue decreased significantly by 4.5 units, PROMIS Anxiety decreased significantly by 6.6 units, and FACT-Leukemia increased significantly by 5.4 units, (all p<0.001). PROMIS Depression decreased significantly (p=0.004) by 2.9 units and PROMIS Sleep Disturbance decreased significantly (p=0.005) by 3.6 units. Anxiety, depression, and sleep disturbance decreased during hospitalization which might be attributable to the patient's increased understanding of the disease process, familiarity with the nursing and medical staff and an ability to express their concerns. Fatigue and physical health remained stable until late improvements near discharge which is suggestive of count recovery. Future work investigating the long term effects of intensive chemotherapy on acute leukemia survivors greater than 2 years post treatment is needed to elucidate symptoms, functional status, and QOL patterns over time.

VISION FUNCTION AND OCULAR SYMPTOMS AFTER HEAD AND NECK CANCER TREATMENT

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Approximately, 45% of head and neck cancer (HNC) patients complain of vision changes after their treatment. HNC treatment involves the anatomical area of vision function and ocular structure. Vision function (VF) and ocular symptoms (OS) after HNC treatment have not been adequately described. The purpose of the study was to describe the relationships of VF and OS with quality of life (QOL) and to explore the treatment variable effects (interactions) in these relationships. This study was a cross-sectional design. Potential participants were included in the study if they had HNC diagnoses and email addresses. An electronic survey was sent to 485 post-treatment HNC patients. The survey included the National Eye Institute Visual Functional Questionnaire, Ocular Symptom Scale, and Functional Assessment of Chronic Illness Therapy–Head and Neck (FACIT-H&N). Multiple regression models with demographic and biological variables serving as covariates were performed. The survey return rate was 25% (N=120). The mean age was 65±10 years old. There were 66% of male participants. When VF and OS were predicting variables, both VF and OS were significant predictors of physical well-being (R2=0.23). VF was the only significant predictor of functional well-being (R2=0.31), emotional well-being (R2=0.23), social well-being (R2=0.06), general QOL (R2=0.32), HNC QOL (R2=0.20), and total FACIT-H&N (R2=0.30). In the test of interactions of VF and treatment variables, surgically treated patients had better QOL (functional well-being [p=0.03], emotional well-being [p=0.01], HNC QOL [p=0.03]) than non-surgical patients at the same unit of VF. Patients who had corticosteroids had better emotional well-being at the same unit of VF (p=0.01). In the test of interactions between OS and treatment variables, surgical patients had worse emotional well-being (p=0.01) at the same unit of OS. Significant relationships of VF and OS with QOL among HNC patients were found. Better VF is related to better QOL after HNC treatment, especially in those who had surgery and corticosteroids. However, HNC patients, who have worse OS after surgery, may experience poorer emotional well-being. Regular vision screening is vital after HNC treatment. This is one of few study to show VF and OS impact on HNC QOL and their interactions with HNC treatments. The findings will lead a new care approach in HNC patients.

PATIENT-NURSE-CAREGIVER SOCIAL PROCESSES AND MANAGEMENT OF PAIN IN HOME HOSPICE

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Despite practice guidelines, pain management in advanced cancers remains problematic. One possible factor in poor pain control is a lack of understanding of social processes that the hospice caring triad (patient, caregiver, and nurse) engages in for pain management. Exploring these social processes could identify where breakdowns in triad pain management occur. The purpose was to describe hospice triad cancer pain social processes in a theoretical framework and use it to identify pain control barriers. Constructivist grounded theory methodology was used with multiple data collection activities for each triad over weeks, including triad observation visits, semi-structured interviews, and a nurse focus group, to produce a rich body of data and triangulation of concepts. Hospice nurses recruited patient participants, who recruited their caregivers. Data from patient-nurse-caregiver triads were analyzed using a recursive coding process, beginning with gerund-coding. Initial coding formed the basis for the generation of working hypotheses about pain management within triads and theoretical sampling of additional data within and across triads. Using a constant comparative approach, framework domains and concepts were generated and defined. Reflexive memoing and weekly team discussions were used to increase trustworthiness. Three triads and a contrasting dyad comprised the final sample, and resulted in collection of data from seven observational visits, 36 interviews, and a focus group. The resulting framework described two reciprocally-interactive hospice cancer pain management processes: 'controlling cancer pain' and 'negotiating proximity'. The former occurred internally for each triad member: perceiving pain, determining efficacy, and identifying numeric and functional pain goals. The latter occurred interpersonally across triad members through distancing, communicating, and agreeing. The framework illustrated critical phases where breakdowns in pain management took place. One critical breakpoint involved triad members making incorrect assumptions about each other's pain perception and goals. The complex dynamics of cancer pain management frequently unrecognized in routine interactions within the hospice caring triad affect pain outcomes. The social processes identified in these data, included assessment of pain perception and functional pain goals, and communication for managing pain. However, there are no tools for assessing functional pain goals, or testing nursing interventions to promote triadic communication in hospice. This study provides an empirical foundation for developing such tools to improve hospice cancer pain outcomes.

CHANGES IN NEUROPSYCHOLOGICAL PERFORMANCE AND PERCEIVED COGNITIVE FUNCTION: ONE-YEAR FOLLOW UP ASSESSMENT OF WOMEN WITH BREAST CANCER

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Cognitive dysfunction has been reported in women treated for breast cancer. However, there are mixed findings on trajectory, contributory factors, and relationship between neuropsychological performance and self-reported cognitive function. Our previous studies demonstrated that post-treatment cognitive dysfunction was found in attention and working memory that were necessary to support executive function and explained by factors beyond the direct biological effect of chemotherapy. In this prospective study, we examined 1) alterations in neuropsychological performance and perceived cognitive function from pre- to post-chemotherapy, 2) predictors of these cognitive outcomes, and 3) the relationship between neuropsychological performance and perceived cognitive function. Women treated with (n=58) or without (n=41) chemotherapy for breast cancer and age-matched healthy controls (n=64) were assessed before any treatment and one year after baseline. Standardized neuropsychological tests (NPT) and Attentional Function Index (AFI) were used to measure attention and working memory. Fatigue, depression, and disturbed sleep were assessed as covariates. Repeated measures analyses examined changes in neuropsychological performance and perception of cognitive functioning and the relationship between objectively measured and self-reported cognitive function after controlling for covariates. Significant group by time interactions were found in both neuropsychological performance and self-reported cognitive function. The chemotherapy-treated group showed reduced neuropsychological test performance and perceived cognitive function compared to the healthy control group showing improved performance and perceived cognitive function. The non-chemotherapy group was intermediate. In multivariable regression models, changes in fatigue were found to be significantly associated with changes in both NPT and AFI scores. Reduced neuropsychological performance was significantly associated with increased complaints about cognitive functioning, when controlling for group membership and changes in fatigue, depression, and sleep. Persistent cognitive dysfunction was found in following chemotherapy for breast cancer. Changes in perceived cognitive function was an independent predictive factor in changes in neuropsychological performance from pre-treatment to one-year later. This finding shows the usefulness of longitudinally assessing subjective experiences in cognitive functioning to easily detect cognitive dysfunction post-treatment to provide early intervention to manage these cognitive problems. This study suggested the important relationship between objectively measured and self-reported functioning in attention and working memory and modifiable factors that can be targeted for nursing intervention to restore cognition of women with breast cancer.

DISTRESS AND ANXIETY: A COMPARISON OF PATIENTS WITH CANCER AND THEIR DISTANCE CAREGIVERS

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While there is substantial research documenting psychosocial characteristics in cancer patients and local caregivers to date, none have focused solely on the comparison of patients with their distance caregivers. Distance caregivers (DCGs) are known to have increased psychosocial stressors associated with providing care from a distance. The purpose of this study is to describe and compare levels of distress and anxiety at baseline in cancer patients and their DCGs. Patient-DCG dyads are enrolled in a large ongoing RCT whose goal is to test the effectiveness of videoconference technology by bringing DCGs into the patient's oncology appointment. Descriptive demographics and psychosocial data were collected upon enrollment in the study. Patient enrollment criteria included adults diagnosed with cancer, being seen regularly by their oncologist, and who identify a DCG to participate in the study. Distress was measured using the NCCN Distress Thermometer and anxiety was measured using the PROMIS Short Form v1.0–Anxiety 4a. For both measures, higher scores represent higher amounts of the attribute. 106 patient-DCG dyads are currently enrolled. The average age of patients was 66.1(12.1) years, majority were female (63.2%), Caucasian (68.9%), and had a diagnosis of stage 4 cancer (66%). DCGs had a mean age of 45.8 (12.8) years, majority were female (67%), Caucasian (69.8%) and the adult child of the patient (68.9%). Mean distress score at baseline was 2.99 for patients (median=3.0, SD=2.5) and 4.09 (median=4.0, SD=2.7) for the DCGs. This difference was found to be significant t(210)=−3.05, p=.003. Baseline anxiety was higher for the DCG group with a score of 54.5 (8.24) than the patients (48.9, SD=9.0) and this difference was also found to be significant t(208.59)=−4.751, p<.001. Research on DCGs in oncology is relatively new but as seen in our results, it is not uncommon for DCGs to experience higher levels of anxiety and distress than patients. Historically, DCGs have not been recognized as a member of the family unit and, as a result have not received the information and support needed to reduce their anxiety and distress. Oncology nurses have the opportunity to partner with DCGs by providing them with educational interventions that have the potential to reduce DCG stress and provide better patient outcomes.

THE STRUCTURE OF ILLNESS-RELATED CONCERNS IN CHILDREN FACING MATERNAL CANCER: A CONFIRMATORY FACTOR ANALYSIS OF A CHILD-REPORTED MEASURE

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Maternal cancer diagnosis and treatment has a significant impact on the children's well being. Children of diagnosed mothers are known to struggle with depression, anxiety, withdrawal, and fears that are attributable to the mother's illness. To best support these children, both clinicians and scientists need to understand and reliably assess the children's illness-related concerns. However, to date, there has been an over-reliance on insensitive measures of the child's experience or an emphasis on the child's psychopathology. What is still needed is a valid measure of the children's reported concerns about their mother's illness. The purpose of the current study was to assess the construct validity of a theoretically driven measure of the child's reported illness concerns, About My Mom's Illness-scale (AMMI). Baseline data were obtained from 187 children (8–12 years) who completed the AMMI in a recently completed clinical trial, The Enhancing Connections Program. Using confirmatory factor analyses, 3 distinct models of the children's illness-related concerns were tested for their fit with the data. The single-global factor model consisted of the entire pool of items in the AMMI. The three-factor model consisted of three separate but interrelated domains of concerns: family, child, and mother. The five-factor model consisted of five separate but interrelated dimensions of concerns: changes on the family's routines and resources, uncertainty, catching the cancer, mother's well-being, and mother's death. Models were evaluated using the commonly accepted goodness of fit indices to identify the best-fitting model. Results confirmed that the five-factor model offered the best fit of the data; the final comparative fit index (CFI) was 0.947 and the root mean squared error of approximation (RMSEA) was 0.045. The internal consistency reliability of each factor in the five-factor model ranged from 0.823 to 0.885. Study results revealed that each of the 5 factors represented a unique category of concern of the school age child. Each factor, therefore, can be viewed as an essential aspect of children's illness-related concerns when their mother is diagnosed with breast cancer. These validity and reliability results are essential to the development of a standardized measure of children's illness-related concerns for future use in descriptive and clinical trials of children's adjustment to maternal cancer.

PATIENT AND CAREGIVER EXPERIENCES WITH FLUID INTAKE AND OUTPATIENT INTRAVENOUS HYDRATION DURING CANCER TREATMENT

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Dehydration is a well-known adverse event during cancer treatment, potentially resulting in emergency room visits and unplanned hospitalizations. Anecdotal evidence suggests that outpatient intravenous (IV) hydration is increasingly used to manage early symptoms of dehydration, yet little nursing research has described this practice. Most of the literature on IV hydration in oncology practice focuses on 1) pre-treatment for nephrotoxic chemotherapy agents or 2) palliative and end of life care. Patient and family caregiver experiences with outpatient IV hydration for the management of early dehydration during active treatment is an understudied area. The purpose was to describe patients' and family caregivers' experiences with outpatient IV hydration during active cancer treatment. Data were collected through semi-structured interviews and electronic medical record review in a longitudinal study of family caregiving and patient self-management during the first 8 months of cancer treatment. Criterion sampling was used to identify a subsample of patient-caregiver dyads in which the patient received outpatient IV fluids. The subsample consisted of 34 patient-caregiver dyads. Patients were mostly women (n = 21), with a mean age of 62. They had lung, gastrointestinal, pancreatic, or head and neck cancer. Caregivers were mostly women (n = 22), with a mean age of 55. Patients had a total of 306 outpatient encounters for IV hydration (range 1–45 per patient). Precipitating factors were multifactorial, including nausea, diarrhea, severe mucositis, and various other reasons for decreased oral intake such as loss of taste and sleepiness. Patients and caregivers struggled in trying to manage fluid needs at home. Signs of early dehydration were subtle and included malaise, fatigue, weakness, and a general sense of feeling unwell. Patients described immediate improvement in overall well-being after an IV infusion. Patients and caregivers expressed clear preferences for continuing to receive IVs despite the potential inconvenience of multiple outpatient visits. Outpatient IV hydration is emerging as a component of supportive care during outpatient cancer treatment. Research is needed on how patients and family caregivers manage early symptoms of dehydration at home and the effects of IV hydration on symptom distress and treatment outcomes. Such research can inform innovative and cost-effective nursing interventions in patient/caregiver education, assessment, timely detection of early dehydration, and management of dehydration before emergency care is needed.

CAN PATIENT ENGAGEMENT ADVANCE THE ONCOLOGY NURSING RESEARCH AGENDA?

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With improving cancer detection and treatment, millions of people are surviving and thriving beyond cancer. 15.5 million US cancer survivors representing 4.8% of the population is expected to increase to 20.3 million by 2026. Many cancer survivors experience long term and late effects of treatment. Current survivorship care accreditation requirements are based on expert opinion, because strong evidence is lacking. The cancer survivors' perspective is rarely reflected in survivorship research. Patient-centered research, including patient engagement throughout the research process, has been proposed as a means to more effectively build relevant evidence for patient care. The purpose was to outline patient engagement strategies used in patient-centered outcomes research and potential impact on advancing the research agenda for oncology nursing. A partnership was created inclusive of cancer survivors, caregivers, oncology nurses and nurse navigators, oncology providers, cancer program administrators, and researchers to identify research strategies to address patient-centered research questions. The partnership, working together for 2 years, has developed research priorities around patient-centered research initiatives. Partnership development methods used include focus groups, surveys, educational presentations, and networking meetings. National cancer survivorship leaders and national patient advocacy organizations been included. This work directly relates to the ONS 2014–2018 Research Agenda Content Areas of Late Effects of Cancer Treatment and Survivorship and Family and Caregivers. Twenty-eight stakeholders were invited to the first partnership meeting in 2015 and a core group of 15 have persisted over the ensuing 28 months. Patient centered outcomes of interest to the partnership include health-related quality of life, symptom management, and return to meaningful work. Comparative effectiveness questions proposed by the partnership focus on exercise, support groups, and navigation interventions. Interprofessional research collaborations advance research by crossing disciplinary siloes and engaging stakeholders with varied interests in nursing research. The addition of patient engagement strategies is the next generation research approach to develop robust research questions, solutions to patient concerns, and patient-identified outcomes. The presentation will outline and discuss successful strategies for patient and stakeholder engagement in the development of nursing research.

THE EXPERIENCE OF BEING AWARE OF DISEASE STATUS AMONG WOMEN WITH RECURRENT OVARIAN CANCER: A PHENOMENOLOGICAL STUDY

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Women with ovarian cancer may face difficult treatment decisions throughout their lives. An important factor in the decision-making process is the individual's awareness of disease status. To date the majority of the literature has conceptualized and operationalized this awareness of disease status from the health care provider's perspective; it is unknown how patients perceive their disease and their process of treatment decision-making. The purpose of this phenomenological study was to understand the lived experience of women with recurrent ovarian cancer and how they understand their disease and make their treatment decisions. Two interviews were conducted with 12 women; each participant had recurrent ovarian cancer and had received multiple chemotherapy treatments. Each interview was approximately 60 minutes and was digitally recorded and subsequently transcribed for accuracy. Interviews focused on patients' understanding of their disease, factors that impacted their understanding, how patients participated in treatment decisions as well as the impact of being diagnosed with, and in treatment for, recurrent ovarian cancer. Colaizzi's method of phenomenological reduction guided the data analysis. The following three themes were intuited: 1) Perceiving their disease as a chronic illness; 2) Relying on doctors to make treatment decisions; 3) Compromised affective wellbeing about the inability to make treatment decisions. The results of this research provide a fresh insight into the understanding of awareness of disease status in cancer patients from the patient perspective. Due to the lack of full understanding of treatment options, patients suffered stress and anxiety elicited by their emotional conflict of wanting-to-be partners in decision making, but relying on doctors to make the decision for them. Given these findings, it is essential to help women with recurrent ovarian cancer with their treatment decisions by implementing a patient-centered intervention.

A PATIENT-CENTERED DECISION AID FOR PREVIVORS

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Deleterious BRCA mutations confer high risks for breast and ovarian cancer. Healthy women diagnosed with a mutation experience fear and a sense of urgency to make health protective decisions. Making decisions necessitates a complex analysis of clinical variables, individual characteristics, and personal preferences. Current decision support resources have limitations. Clinical guidelines are written at a post graduate reading comprehension level and require specialized knowledge for understanding. Resources do not address all options available to unaffected carriers; or exclude psychosocial issues impacting the decisional process. The purpose of this study was to develop and test a patient focused, evidence-based, comprehensive decision aid at the 9th grade reading level, consistent with clinical guidelines for unaffected BRCA mutation carriers (previvors). A steering committee of four nurse experts developed the prototype aid, which was evaluated by twenty-five participants; ten experts and fifteen end users. End users were self-reported previvors recruited from the support group Facing our Risk of Cancer Empowered (FORCE). Quantitative and qualitative data were collected by survey. On identical scales, expert reviewers' mean scores were 3.63 or higher and end users' scores were 3.31 or higher on a four point likert scale from poor to excellent for organization, clarity, usefulness, comprehensiveness, and ease of understanding; while expert scores were all 4.0 and end user scores were 3.36 or higher on a four point likert scale from not relevant to highly relevant for all sections of the decision aid. Findings from this study suggest that the decision aid is comprehensive, well-organized, useful, and relevant to the cancer risk management decision making process of previvors. Oncology nurses have an opportunity to improve the quality and integration of care among physicians, genetic counselors and nurses by initiating a patient centered approach through use of the decision aid. The aid prompts consideration of individual values, characteristics and preferences, and supports collaboration of the multidisciplinary team in caring for previvors.

COMPARING BREAST CANCER RISK FACTORS AND BREAST SCREENING BETWEEN BUTCH LESBIANS AND FEMME LESBIANS IN TAIWAN: A PRELIMINARY RESULT

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Lesbians were found to have higher risk of getting breast cancer and lower utilization rates of breast cancer screenings in Western countries. In Taiwan, lesbians' gender identity (butch/femme) and gender role expression (masculine/feminine appearances) were indicated to affect their unitization rates of healthcare services and experiences in medical healthcare settings. However, there is a lack of evidence to understand differences of breast cancer risk factors and breast healthcare intentions and behavior among lesbians with varied gender identities in Taiwan. This study aims to exam the differences between butch lesbians and femme lesbians in Taiwan on breast cancer risk factors and breast screening intentions and behavior. An online cross-sectional survey was used to collect data. A total of 250 women who self-identified as a butch/femme lesbian and aged 20 years and above were recruited via five LGBT organizations, two lesbian communities on Facebook and one lesbian online chatroom. Of the 250 women, there were 158 butch lesbians (Mean 28.96, SD 7.313) and 98 femme lesbians (Mean 29.45, SD 6.262). There were no significant differences on reproductive factors (age of first menstrual period, age of first live birth of a child, number of children, breastfeed, miscarriage, abortion) and behavioral risk factors (smoking, drinking, exercise) between the butch lesbians and femme lesbians, in addition to experiences of being pregnant and using contraceptives. Femme lesbians were found to be more likely to have experiences of being pregnant and using contraceptives. Butch lesbians, on the other hand, were found to be more likely to bound their own breasts tightly by using breast bindings or sport-bra during daily life. Regarding breast healthcare intentions and behavior, there were no significant differences on experiences of practicing breast self-examinations and intentions to practice breast self-examinations and to have a mammogram in the future within the two groups of women. However, the butch lesbians were significantly less likely to practice breast self-examinations on a regular basis. Healthcare providers should understand differences of breast cancer risk factors and utilizations and intentions of breast cancer screenings among butch lesbians and femme lesbians in Taiwan, and therefore, provide culturally competent care to lesbians with varied gender identities.

MEDICATION BELIEFS AMONG PATIENTS RECEIVING ORAL ONCOLYTIC AGENTS: PREDICTORS AND CHANGE OVER 12 WEEKS SINCE INITIATION

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Oral oncolytic agents (OAs) account for over half of newly Federal Drug Administration-approved cancer treatments. OAs provide new challenges for cancer patients, which can influence perceptions of OA medication. OAs are often prescribed as a last available line of treatment for patients with advanced cancer. Adherence to and sustainment of treatment may depend on patients' medication beliefs, however, factors impacting such beliefs in the first few months of treatment have not been investigated. Further, properties of the Beliefs about Medicines Questionnaire (BMQ), an instrument widely used to elicit medication beliefs in cancer and other chronic illnesses, has not been examined in patients taking OAs. The purpose was to identify factors affecting medication beliefs among advanced cancer patients in the first 12 weeks since initiating a new OA. Data were derived from a National Cancer Institute-funded randomized controlled trial, testing an intervention to promote symptom management and OA adherence. The trial enrolled patients initiating OA treatment at eight Midwest cancer centers. Medication beliefs [(BMQ)], symptoms [Symptom Experience Inventory], comorbid conditions [Bayliss], physical function [PROMIS short form-10], and depressive symptomatology [CES-D] were assessed at baseline, four, eight, and 12 weeks. Medical record audits determined OA interruptions and/or stoppages. Descriptive statistics, factor analysis, correlations, and longitudinal mixed effect models were utilized to determine BMQ subscales (dependent variables) and relate them to fixed and time-varying independent variables. The BMQ comprised a three factor structure; medication beliefs about Necessity, Concern and Interference. Medication Necessity and Interference beliefs increased over time, while Concern beliefs decreased. The only treatment-related factor impacting perceived Necessity was permanent OA stoppage. Increases in medication Concern were associated with temporary OA interruptions and higher symptom severity. Higher symptom severity was associated with increased Interference beliefs. The BMQ revealed a three factor structure, indicating medication beliefs among advanced cancer patients receiving OAs are unique. Medication Concern and Interference beliefs were negatively impacted by OA interruptions and symptom severity suggesting these beliefs are vulnerable to change across the treatment trajectory, while Necessity remained stable until permanent OA stoppages occurred. Nurses have a critical role in assessing and addressing medication beliefs among advanced cancer patients. Nurses can intervene to assist patients manage symptoms that can contribute to negative medication beliefs and improve patient outcomes.

EFFECT OF FAN FOR DYSPNEA IN ADVANCED CANCER PATIENTS—A RANDOMIZED, CONTROLLED, TRIAL

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Dyspnea is a common distressing and devastating symptom of patients with advanced cancer and affects negatively physical emotional and psychosocial aspects. Despite advances in managing dyspnea, many patients experience refractory breathlessness that often worsens as death approaches. There is emerging evidence that using a fan to provide facial airflow can reduce the sensations of dyspnea. In clinical nursing practice and preliminary studies, patients have consistently reported fan therapy as an important intervention. However, no conclusions can be drawn regarding its effectiveness in patients with advanced cancer with dyspnea because of a lack of rigorous clinical trials. The purpose is to clarify the effectiveness of fan-to-face compared with fan-to-legs for relief of dyspnea in advanced cancer patients. Methods: In this single-blind randomized controlled trial, we enrolled patients with advanced cancer from a palliative care unit of cancer specialist hospital in Japan. We randomly assigned in a 1:1 ratio to the intervention (fan-to-face) or control group (fan-to-legs). Participants were stratified by baseline dyspnea NRS level (≤ 7) and randomized to treatment by a computer-generated system. The intervention to be tested was a fan directed to blow air for 5 minutes across the region innervated by the second/third trigeminal nerve branches. In control group, they used a fan to blow air on their legs for 5 minutes. The severity of dyspnea was measured using an NRS. The primary endpoint was relief from dyspnea intensity. We used independent samples Student's t test to compare patients' relief from dyspnea. Between September 28, 2016 and August 25, 2017, we screened 429 eligible patients. 40 patients consented and were randomly assigned (20 to fan-to-face and 20 to fan-to-legs). Mean difference change in dyspnea changed by –1.35 points (95% CI –1.86 to 0.84) in fan-to-face group and by −0.1 points (−0.53 to 0.33) in fan-to-legs group (p< .001). We did not find any adverse effects and any significant difference in clinical parameters. Fan-to-face improved dyspnea in advanced cancer patients compared with fan-to-legs. This fan therapy is a feasible, safe and inexpensive nursing intervention, and is expected to be effective in alleviating dyspnea in patients with advanced cancer.

EXPLORING SYMPTOM CLUSTERS IN BREAST CANCER SURVIVORS: A LATENT CLASS PROFILE ANALYSIS

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A symptom cluster contains two or more symptoms that occur together and are related to each other. Little symptom cluster research has focused on cancer survivors, particularly breast cancer (BC) survivors who experience multiple, concurrent symptoms. The purpose of this study was to identify symptom clusters based on four highly prevalent symptoms (pain, fatigue, sleep disturbance, and depression) in BC survivors and to determine socio-demographic and clinical characteristics influencing symptom cluster membership and provide insights that may inform research on common mechanisms and treatment. This study was a cross sectional secondary analysis of data obtained from PROMIS 2 My-Health study in partnership with four SEER cancer registries located in California (two), Louisiana, and New Jersey. The analytic sample obtained included 1,500 BC survivors 6-12 months following BC diagnosis. Latent class profile analysis was used to identify symptom clusters among four symptoms measured using Patient Reported Outcomes Measurement Information System (PROMIS®): pain, fatigue, sleep disturbance, and depression. The sample was predominately younger at diagnosis (aged 21–50) (41%), Caucasian (48%), married/cohabitating (60%) and employed (57%). Four distinct classes were identified: No symptom (Class 1); Mild fatigue, sleep disturbance, and depression (Class 2); Moderate pain and Mild fatigue, sleep disturbance (Class 3); and Moderate all symptoms (Class 4). Significant differences among the four latent classes were found for several socio-demographic factors including age at diagnosis, education, income, and employment and clinical factors including surgery, chemotherapy and comorbidities. In particular, survivors who were younger at diagnosis, had lower education level, and were unemployed were more likely to be in symptomatic groups (Class 2, Class 3, Class 4) compared to the no symptom group (Class 1). Identification of unique symptom clusters will be useful in helping BC survivors and health care providers understand that symptoms often occur in groups whereby one symptom may predominate but others are present in varying degrees of severity. These clinical insights may lead to designing more individually targeted prevention and treatment strategies that focus on a group symptoms rather than a single symptom. The results also suggest that the identification of socio-demographic and clinical characteristics that place patients at risk for a higher symptom burden can be used to guide research and clinical interventions for personalized symptom management.