Clinical Posters From JADPRO Live 2022

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JL1001C

A Bone Marrow Aspirate and Biopsy Educational Program for Advanced Practice Providers Utilizing Task Trainers

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Background: Advanced practice providers (APPs) who care for patients with hematologic malignancies perform bone marrow aspiration and biopsies (BMBX) to aid in the diagnosis and treatment. Bedside procedures are often taught through the observational training method which can lead to inconsistencies. **Problem:** The purpose of this project was to create and evaluate a standardized educational curriculum incorporating simulation with a task trainer for Bone Marrow Transplant (BMT) APPs. The project aimed to reduce BMBX risk events, improve BMBX knowledge, and increase APP self-reported confidence. **Methods and Interventions:** Pre- and post-program surveys were utilized for knowledge assessment of BMBX procedures, specimen allocation, and testing. Each program was delivered over three hours and included an educational PowerPoint and three breakout sessions: BMBX kit review; simulation on a task trainer; and review of BMBX specimen collection procedures. Knowledge assessment surveys were compared through descriptive and statistical analysis. **Results:** BMBX specific risk events decreased from 1.92 events per month pre-implementation to 1.2 event per month post-implementation. Overall BMBX knowledge increased from 41.02% on pre-program surveys to 65.72% on post-program surveys. Additionally, participant self-reported confidence improved by a mean difference of -1.85 based on 5-point Likert scale. $t(12) = -1.85$, $p = < 0.0001$, 95% CI [-2.49, -1.2]. **Implications:** This single institution program evaluation project suggests that the use of simulation with task trainers is beneficial when paired with standardized educational curriculum. Simulation training for APPs who perform BMBXs can improve procedural knowledge, increase self-reported confidence, and may reduce risk reporting.

JL1002C

Advanced Practice Provider–Led Initiative to Improve Germline Testing for Pancreatic Cancer in a Multilocation Practice

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Introduction: Pancreatic cancer remains the third leading cause of cancer-related death in the United States. Many recent pharmacologic advancements have stemmed from an increasing understanding of hereditary syndromes, caused by germline mutations in genes such as BRCA 1/2 & PALB2. Identification of these germline mutations can lead to alternative upfront or later-line targeted therapeutic options and allow for risk stratification and surveillance recommendations

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for affected family members. In March 2019, the NCCN Clinical Practice Guidelines for Oncology recommended that germline testing be considered for all patients with pancreatic adenocarcinoma. Our goal was to develop an efficient means of standardizing germline testing for all eligible patients, with either a current or past diagnosis of pancreatic cancer. Previous methods to increase compliance within our offices, including chart reviews and individual messages to the treating physician, have not been successful. **Method:** An Advanced Practice Provider (APP)-driven initiative was developed, with the use of an algorithm. A report was created by IT, identifying all patients with a current or past diagnosis of pancreatic adenocarcinoma, that had not had previous genetic testing. This report was run weekly for each of our seven office locations, providing a list of patients scheduled for an appointment in the upcoming week. The office designated APP would confirm pathology and then contact the patient to discuss the recommendation for germline testing prior to their appointment. If the patient consented to proceed, an order would be placed in the electronic medical record (EMR) for a sample to be acquired at the upcoming appointment. Our molecular team, consisting of an LPN and MA, would then complete a form in the online portal for the testing company, track result status and upload to the EMR when complete. Each patient was then provided with a review of findings, and referral for genetic counseling if indicated. **Results:** From 1/31/22 – 6/10/22, 74 individual patients with pancreatic cancer were identified as having upcoming appointments. Of these, 47(63%) had previously undergone testing. Our initiative led to genetic testing of 19 of the remaining 27 (70%). This increased overall compliance to 89%. **Conclusion:** Utilization of APPs in the standardization of genetic testing has proven to be a viable delivery method for increasing compliance. Over a four-month period, we increased our overall compliance rate by 26%, leading to an overall rate of 89%. **Recommendations:** Integration and utilization of the EMR for identification of eligible patients and order completion still requires improvement. Our APP-led initiative is still a very manual process, with the need to follow spreadsheets and consistently run weekly reports. Ideally, the EMR would provide automated prompts based on diagnosis. Other barriers encountered include the lack of standardization of genetic testing preference options amongst providers, difference of opinions regarding the role of uniform testing, as well as human errors with incorrect or lack of order placement. We plan to apply this method to molecular testing in other disease process, hopefully utilizing more ancillary staff in the report process.

JL1003C

An Advanced Practice Provider–Run Lymphadenopathy Clinic: The Cleveland Clinic Experience

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Background: Lymphadenopathy is a specific sign/symptom with variable clinical presentation including patient self-exam, provider exam or incidental finding on imaging studies. When identified, the management and use of biopsy for evaluation can also be highly variable given the associated history and extensive differential diagnosis associated with lymphadenopathy. For this reason, in 2017 we at The Cleveland Clinic established an Advanced Practice Provider (APP) staffed lymphadenopathy clinic to specifically evaluate and manage these patients. **Methods:** We prospectively followed patients referred to our clinic for lymphadenopathy from August 2017 through February 2022. A total of 151 patients were referred during that time. Patients were assessed for how the lymphadenopathy was discovered (e.g., exam, imaging), rate of biopsy referral, and diagnostic outcome following biopsy. **Results:** Of the 151 patients referred, the median age was 51.2 years (range 18-89) with 54% male and 46% female. Lymphadenopathy was most commonly discovered when patients underwent imaging for acute symptom assessment (45%), compared to those where lymphadenopathy was initially found on either self or provider exam (32%) or incidentally identified on imaging performed for other reasons (23%). A total of 62 patients (41%) were referred for a tissue assessment (lymph node biopsy n = 48, bone marrow biopsy n = 9, peripheral blood flow cytometry n = 3, skin biopsy n =1, unknown n = 1) after the initial consultation of whom 38 (61%) were found to have a malignant diagnosis

representing 25% of the 151 total patients referred to our lymphadenopathy clinic. The most common non-malignant diagnoses among patients referred for tissue assessment was a negative/reactive/benign process (12 of 24, 50%) followed by follicular hyperplasia (3 of 24, 12.5%) and non-caseating granuloma/sarcoidosis (3 of 24, 12.5%). The most common malignant diagnoses were lymphoma (89.5% of all malignancies) with follicular lymphoma, grade 1-2 occurring most frequently (11 of 38 newly diagnosed malignancies, 29%). **Conclusion**: Our lymphadenopathy clinic provides a valuable referral service for the management of lymphadenopathy of unknown cause. Based on our sampled patient population, 1 in 4 patients referred were found to have a newly diagnosed malignancy. High volume referral centers may consider opening a similar APP-run clinic to systematically evaluate this group of high risk patients.

JL1004C

Advanced Practitioner Leadership Achievements in Increasing Satisfaction and Reducing Burnout

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Objective: As AP leaders, we tend to be skills at managing utilization, scope, and quality of practice. Satisfaction and burnout are difficult landscapes to address and make effective changes within. Our cancer center addressed engagement and burnout with recognizable success. **Intervention:** AP Leadership utilized multiple years of Press Ganey data, the NCCN APP Best Practice Committee survey, Annual Performance Review (APR) feedback and regular staff meeting comments to identify areas of high impact, high reward to focus our efforts. With implementing strategies around key items, our institution was able to have a top score on the NCCN best practice committee satisfaction survey completed in 2021. **Discoveries:** AP leaders synthesized the above data to identify most valuable items to the APs. These include: APs reporting to AP leaders, Right people doing the right work, Competitive pay, Growth opportunities and Flexibility. **Actions:** AP leadership FTE growth was achieved during this time by providing deliverable outcomes of growing the leadership including: Revenue generation by documentation auditing and education, new clinical opportunities and procedures, cost savings by quality improvement work, and better access by working with physician leaders to understand AP productivity metrics. We hypothesized a larger AP leadership team would better affect engagement, reduce turnover and further cost savings. The AP leadership team grew from 3 FTEs/ 89 APs to 7 FTEs/122 APs from 2019 to 2022. Relationship building and trust were instrumental our survey success. Other methods included leadership training and clear role and responsibilities for APs. Poorly assigned duties are a major dissatisfier. Clerical work, documentation tools, scheduling, and care coordination create workflow inefficiencies. Not having enough team members to get the job done safely was another theme identified. We defined staffing ratios/clinic templates using evidence-based principles, invested in back up staffing and floating models to fill staffing gaps. Leadership also advocated for regular market assessments and wage adjustments to support a competitive pool of applicants which was achieved twice in the last 5 years. Our teams were asking for workhour flexibility. We found giving flexibility (where possible) has created a culture of ownership and responsibility for their team, goals and outcomes. We support self-scheduling inpatient and moved from 5- 8s to 4-10s. Outpatient APs have dedicated time from clinic for practice support activities (peer to peers, EMR inbox management, survivorship, coordination, projects, and committee work) and control over template start/stop times. It is well published that professional development (PD) reduced burnout in clinicians. PD activities include: implementing antineoplastic prescribing, fellowship program, committees, and AP led consults. Time away is supported for projects, publications and speaking engagements. **Proposals:** We propose cancer centers advocate for AP leadership structures that support opportunities for increasing project work, publications, speaking engagements, and relationship building with their teams. This has shown to be beneficial to the direct reports and financially impactful to our cancer center in a favorable way. Engagement work can be more meaningful and structured as well as a better opportunity for resource allocation with appropriate leadership. **Summary:** APs

are skilled professionals who are prone to burnout and disengagement in line with physician and nursing colleagues. Careful attention, direct action planning and leadership support can have a significant impact on AP satisfaction, especially if utilizing the voice of the AP to direct the efforts.

JL1005C

Building Best Practice for Oral Antineoplastic Therapy Programs (Phase 1): A Model for Multisite, Advanced Practitioner–Led, Quality Care Initiatives

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Background: Advanced Practitioners (APs) are poised to serve as agents of change for practice transformation, including leading the development and clinical integration of and oral antineoplastic agent program (OAP). Practices across the United States have variable levels of OAPs, some with no structured elements, and others with established programs. However, the variability in the structure and success of OAPs presents an opportunity to employ a practice analysis process and early proposal for best practice. **Program Objectives**: This multi-site AP-led quality of care/improvement (QI) initiative was aimed at developing an APSHO-led practice transformation initiative with APs serving in a site lead role and as the primary agent of change in conducting a practice analysis using an OAP Blueprint to identify opportunities and barriers in developing or optimizing an OAP. **Methods:** A site selection survey was deployed to 10 hematology/oncology practices with AP leads identified by the project core group as meeting eligibility criteria: 1) AP is APSHO, 2) site AP Leads represent a diversity of AP roles, 3) sites representative of range of hematology/oncology practices, 4) administrative support for program participation over a 6-month period, and 5) AP commitment to act as an agent of change in their practice for this projectThe Plan-Do-Study-Act (PDSA) Methodology was used to guide this quality initiative using an iterative cyclic method, continuous data collection, and project adaptation based on analysis of each PDSA phase, and a theoretical foundation of evidence-based practice.This project was granted IRB Exempt status by the WCG IRB on May 13, 2022. APSHO is registered with WCG IRB as a study sponsor. **Results:** Five hematology/oncology practices, representing community and academic centers were selected to participate in this project and represent the multi-site working group (WG). Monthly WG meetings and ad-hoc project lead and site lead 1:1 meetings were held using the PDSA methodology to identify priorities. In addition, development of a TEAMs site for sharing of minutes, review of taped meetings, and sharing resources provided an infrastructure for this project. Within the first 4 months of the project, site leads were able to conduct an initial practice analysis using the OAP Blueprint. Identification of key stakeholders, analysis of existing OAP processes, identification of barriers to implementation, and analysis of the documentation of the OAP process in the Electronic Health Record (EHR) have been summarized by each practice. The most common barriers identified by site leads for conducting the practice analysis included: 1) Time within my own schedule, 2) Availability/time for key stakeholders, 3) Staffing shortages: nursing, 4) Staffing shortages: providers, 5) Competing priorities: professional and 6) Competing priorities: professional. Each site lead identified practice specific gaps, the most important change to be made in their individual practice, opportunities to improve documentation for the OAP process, and ranked stakeholders critical to implementation of or optimization of an OAP process. Individual practice profiles and initial OAP workflows have been developed. All site leads expressed optimism in being able to implement these changes in phase 2 of the project. **Conclusions:** Establishment of a APSHO Project Core Team (December 2021), Steering Committee (April 2022), and Project Working Group (May 2022) has successfully provided a foundation for an APSHO supported multi-site QI project focused on practice analysis and optimization for OAPs. Phase 2 of this project will focus on implementation of changes identified

in the practice analysis and recommendation for best practice for OAPs. **Recommendations:** This innovative IRB approved project provides a model for future multi-site initiatives sponsored by APSHO and implemented by a representative group of AP experts and practices.

JL1006C

Burkitt's Lymphoma During Pregnancy: A Case Report and Review

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Background: Burkitt's Lymphoma (BL) is an aggressive B-cell non-Hodgkin's lymphoma (NHL) characterized by a high proliferation rate and the dysregulation of the c-myc gene. BL during pregnancy is extremely rare and just 40 cases have been reported since 1900. Given its aggressive nature, it can be fatal if left untreated to both the mother and fetus. We present a case of a pregnant woman with stage II extranodal BL diagnosed at 16 weeks gestational age (GA), who received a Methotrexate (MTX) free therapy as a bridge to postpartum HD-MTX therapy. **Case Report:** A 31-year-old woman diagnosed with BL at 16 weeks GA, confirmed by core needle Immunohistochemistry demonstrated neoplastic cells positive for CD43, CD79a, C-MYC (>90%), and BCL6 and negative for CD3, CD34, BCL2, MUM1, TDT, and CyclinD1. Ki-67 proliferation index was 100%. Bone marrow aspiration and biopsy were negative for lymphoma, but positive for Epstein Barr Virus (EBV) by PCR. Due to pregnancy, patient underwent MRI whole body without gadolinium contrast for staging purposes. Baseline echocardiogram was normal. She had stage II disease, elevated lactate dehydrogenase (LDH) and B symptoms including drenching night sweats at diagnosis. Due to the teratogenic nature of MTX, patient was initiated on cyclophosphamide, vincristine, doxorubicin, and dexamethasone (HyperCVAD) part A for four cycles prior to scheduled induction at 30 weeks plus intrathecal chemoprophylaxis using cytarabine. Following cesarean section delivery, restaging via PET/CT demonstrated a complete metabolic response. She continued with HD MTX, rituximab, and high dose cytarabine (part B). In total, the patient received a total of 6 cycles of R-HyperCVAD Part A and B, and achieved a complete response by PET/CT. Currently, she is over 24 months post chemotherapy with no evidence of disease by imaging. Her daughter is now 2 years old and is happy and healthy. **Brief Discussion:** There are several variants of BL including endemic, sporadic, and Human Immunodeficiency Virus-associated BL. The sporadic variant is most commonly seen in the United States and Western Europe. BL comprises 30 percent of pediatric lymphomas and < 1 percent of adult NHL in the United States. Standard treatment for BL is multiagent chemoimmunotherapy including HD (MTX), which is highly teratogenic. In this patient's case, proper care coordination and monitoring was critical. Patient was seen by a maternal fetal medicine (MFM) physician with ultrasound prior to each dose of chemotherapy and was monitored up to 2-3 times with weekly lab draws. Advanced Practioners (AP's) played an important role in our patient's care and coordination. **Conclusions:** Treating and managing BL in a pregnant patient is rare, but is extremely challenging. Patients require proper education and risk versus benefit discussions prior to treatment as well as close monitoring by a multidisciplinary team of both mother and unborn child during treatment with multi-agent chemoimmunotherapy. Studies have demonstrated improved outcomes in pregnant patients when they receive upfront aggressive chemotherapy. However, providers must also balance the potential life-threatening effects of this disease while minimizing treatment's toxic effects to the fetus. AP's play a critical role in this care coordination and managing of patient's potential toxicities while undergoing therapy and in the post-partum period.

JL1007C

Care Coordination Strategies for Patients Receiving Combination IV and Oral Anticancer Therapy: Findings for Advanced Practitioners From a National Mixed-Methods Study

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Background: When combination medical therapy incorporates both IV and oral anti-cancer agents, patients may experience compound side effects and face greater challenges with treatment adher-

ence. To assess how advanced practitioners and other healthcare professionals (HCPs) working in community cancer settings may improve care coordination for patients receiving combination IV/oral systemic therapy, the Association of Community Cancer Centers (ACCC) conducted a national mixed-methods study. **Methods:** This study followed a sequential quantitative-qualitative design to answer questions around the barriers or challenges associated with the delivery of combination IV/oral therapy. The quantitative phase included an online survey of HCPs. In the qualitative phase, the HCP survey results were further contextualized through focus groups and individual interviews. **Results:** The survey was completed by 157 HCPs. For this analysis, we reviewed the responses provided by NPs/PAs (n=21) and pharmacists (n=27).Biggest Challenges: APs identified the following topics as the "top challenges" associated with treating patients with combination IV/oral therapy (respondents selected up to 3): 1) Cost of care to the patient (51%)2) Treatment coordination (45%)3) Health insurance (43%)4) Adherence and/or pill burden (23%)5) Treatment-related side effects (17%)Effective Strategies: APs identified the following as "top strategies" for improving care coordination for these patients (respondents selected up to 3): 1) Coordination and follow-up by in-house clinicians (57%)2) Adherence education and discussions (36%)3) Use of external assistance programs (33%)4) Frequent communication with specialty pharmacies to ensure timely delivery of oral medications (27%)5) Use of medically integrated dispensing (20%)Adherence to oral therapy: APs identified the following as useful tactics to ensure adherence to oral therapy (respondents selected up to 3): 1) In-person assessment during office visits (53%)2) Calendars and dairy sheets (54%)3) Telehealth visits (38%)4) Phone call reminders (26%)5) Pill reminders (15%)Patient concerns: APs identified the following as the biggest concerns among these patients (respondents selected up to 3): 1) Financial worry: (56%)2) Anxiety (34%)3) Fatigue (31%)4) Inability or decreased ability to work (30%)5) Patient's perception of goal of treatment (25%)In focus groups, APs discussed the importance of prioritizing efforts to prevent and mitigate financial toxicity, especially for patients receiving oral therapies. They also explained some of the challenges with coordinating care (eg, medication dispensing, tracking medication delivery, documenting start dates) as patients may receive oral agents from different specialty pharmacies. **Conclusions:** This study identifies ways for APs to improve care coordination as patients with cancer are treated with combination IV/oral therapy. These findings may inform the creation and dissemination of effective practices and quality improvement projects. These results may also help APs coordinate resources and take proactive steps to address some of the key challenges patients may face during combination IV/oral anti-cancer therapy.

JL1008C

Development of an Inpatient Admission Infusion Center to Improve Admission Flow and Patient Experience

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Background: At a large academic hospital in the Mountain Region, planned chemotherapy admissions are often hindered by ongoing hospital capacity challenges leading to inefficient inpatient unit flow, patient and provider dissatisfaction, potential increased risk for adverse events, and lost revenue. As oncology providers, we recognize that a cancer diagnosis is life-changing and causes significant stress for our patients. We owe it to our patients to try to make the process of receiving treatment as reliable, efficient, and pleasant as possible. **Processes and Interventions:** In an effort to create an improved patient experience our multi-disciplinary team created a mini-infusion center on the inpatient unit with dedicated equipment and staffing to ensure that scheduled chemotherapy admissions can reliably and efficiently be admitted early in the day; their chemotherapy can consequently be started earlier in the day when sufficient resources including nurses, pharmacists, and providers are available; and ultimately reduce patients' length of stay thereby reducing overall costs and improving hospital capacity while improving patient and provider satisfaction. **Results:** By implementing a three-month pilot of this proposal using just two dedicated spaces on

the inpatient unit, we were able to admit 75% of our scheduled chemotherapy admissions by 1200 and reduce our pre-chemotherapy outpatient provider appointments from 32% to 13%. Data collected from this pilot program revealed that patients who were admitted earlier in the day had a reduced length of time from admission to chemotherapy start time and a reduced length of stay from 4.9 days to 4.3 days resulting in a savings of $40,707 during the pilot. Extrapolating from this pilot program, by creating a permanent inpatient infusion area for early admissions with three patient bays, our estimated cost savings is $760,000/year. Additionally, the development of a reliable and streamlined admission process with dedicated staff and space resulted in improved patient and provider satisfaction. **Conclusions:** Creating a dedicated space for scheduled chemotherapy admissions on an inpatient oncology unit creates a more efficient admission process for both patients and staff. Patients can be efficiently evaluated and admitted so that admission to chemotherapy start time is minimized thereby reducing their overall length of stay. This process improvement results in increased patient satisfaction as patients can anticipate their admission process when admitting for chemotherapy and know that their hospital stay will result in as minimal an impact on their lives as possible. **Recommendations:** We recommend the creation of a permanent Admission Infusion Center on inpatient oncology units to minimize chemotherapy delays, patient and provider frustration, and potential safety issues by dedicating staff and equipment to this space in order to streamline the admission process of scheduled chemotherapy patients.

JL1009C

Development of an Oncology Acute Care Clinic Dashboard to Assess Patient Outcomes

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Background: Due to disease burden and treatment-related side effects, more than 53% of oncology patients visit the emergency department (ED) for symptoms that could be best managed in outpatient settings. Many cancer centers across the United States have implemented urgent or acute oncology care clinics (ACCs) led by advanced practice providers (APPs) to decrease ED visits and to provide prompt high-quality care. To monitor and measure patient outcomes and to present findings to improve decision making, a visual dashboard report was generated to assess the impact on oncology patients and to measure clinical outcomes. **Methods:** A multidisciplinary team consisting of oncology APPs, nurses, pharmacists, and cancer center leadership identified key performance measures. To ensure the quality of the measures, the APP team collaborated with a quality improvement analyst to establish the definitions and business rules for each measure. Based on the ACC department identity code, data from appointments are extracted from the storage warehouse of electronic medical records (EMR) using structured queried language (SQL) and are uploaded into Tableau, a user-friendly analytic tool, which creates visual graphs and tables to generate the dashboard. Key performance measures are updated monthly and visualized on dashboard. **Results:** Dashboard measures included: daily patient volume, length of stay, chief complaint, diagnoses, patient disposition (home, direct admission, ED transfer), orders entered, primary cancer diagnosis, ED visit within 72 hours of an ACC visit, and the referring disease-oriented team. From August 2020 to June 2022, a total of 1,842 patients were seen in the ACC. Of these visits, 78 patients presented to the ED within 72 hours of ACC visit, with 59 ED visits having occurred when the ACC was closed. The average length of stay in clinic was 3.19 hours. The most common presenting chief complaints were gastrointestinal symptoms (367 visits) followed by weakness/hypovolemia (189 visits). The most common imaging orders placed were plain films and computed tomography (CT) scans. The most common labs ordered were complete blood count with differential and comprehensive metabolic panel. **Conclusion**: The ACC dashboard enables APPs and key stakeholders to measure and compare patient outcomes, as well as resource allocation. Patient volumes, timing of visits, and the type of diagnostic test ordered facilitate strategic planning for future patient needs. Retrospective analysis of patient data also demonstrates an overall reduction and prevention of ED visits. The dashboard has also assisted in evalu-

ating the quality of care provided and identified opportunities for improvement with the clinic. **Implications:** Dashboard data has provided a platform to engage the acute care APP team and identify interventions and preventative measures in the outpatient setting to help minimize ED visits for patients with cancer. The dashboard has also helped imaging, laboratory and pharmacy partners anticipate and plan for future needs to improve patient care.

JL1010C

Development of an Overnight Virtual Advanced Practice Provider to Support Night Shift On-Site Staffing

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Purpose: The demands of healthcare workers continue to be pushed to the limit, especially over the past few years during such a significant event as the COVID-19 pandemic. Studies suggest that nearly half of all healthcare providers are experiencing burnout at any given time . Increasing workload and patient complexity in the setting of consistent staff turnover can lead to burnout, low morale, and thus poor quality of care provided. Typically, healthcare providers work in the confines of a physical space, caring for patients via face-to-face interactions, utilizing physical examinations, and recording medical histories. However, the need for an alternative mode to provide care was realized during the COVID-19 pandemic when staff were frequently forced to isolate due to illness and exposure, leaving units understaffed and staff overworked. Night shift specifically tends to have a higher provider-to-patient ratio with fewer resources available for support. Telemedicine is typically used in the outpatient setting with similar outcomes to in-person healthcare visits. At the University of Colorado Hospital on the bone marrow transplant unit during the pandemic, a new APP role was developed to implement telemedicine in the inpatient setting. The goal of this role was to support the overnight provider to dedicate increased attention toward higher acuity patients, provide adequate time for evaluation and management of new admissions, improve provider morale, decrease burnout, and remove tasks that may take concentration away from complex patients. Lastly, the utilization of this virtual provider provided nursing staff a resource for less urgent medical issues and questions that did not require in-person patient evaluation. **Design and Process**: Advanced practice providers (consisting of both NPs and PAs) who currently staff the Bone Marrow Transplant unit at University of Colorado Hospital were given the option to provide virtual support in conjunction with the overnight provider shift. The Overnight Virtual Advanced Practice Provider (OVAPP) worked a 6-hour shift during the overnight shift. This APP triaged patient phone calls, monitored the emergency department track board for BMT patients, answered consulting calls and requests for transfer from outside hospital physicians, and responded to nurse requests via secure communication through the hospital's electronic medical record. OVAPPs, night providers, and nursing staff were then surveyed to evaluate outcomes related to the addition of the virtual provider. **Findings:** Overall increased employee satisfaction from APPs and nursing staff secondary to increased support. While the development of this role is still in the early phases, preliminary survey results have shown that continued development of this role is promising and could revolutionize the care delivery system for both patients and providers. 100% of providers surveyed agreed that the OVAPP role assisted night shift providers in providing improved quality of care and reduced burden on night shift providers, while 75% of providers agreed that OVAPP reduced provider burnout and improved overall job satisfaction. Nurses agreed with the results from our APP survey. 90% of nurses agreed that having an OVAPP on service improved the quality of care provided to patients and improved nurses' ability to respond to patient needs and decreased delays in care. **Conclusions:** Telemedicine has been utilized in the outpatient setting for several years, providing greater flexibility and access to care for patients. Implementing telemedicine to support the inpatient provider is a novel approach to inpatient care that provides better care for patients while also supporting overnight providers and nurses. **Recommendations:** Areas of future research include evaluating the quality of patient care directly, noting the speed of responses to nursing requests that would ideally lead to improved outcomes and patient satisfaction.

JL1011C

Early Identification for Fertility Preservation Improves Referrals in a Community Oncology Practice

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Background: Fertility preservation is a major concern of adolescents and young adults (AYAs, age 15-39) with cancer. Multiple professional organizations recommend guidelines for addressing fertility with prompt referral if indicated. However, a gap remains in practice to address the potential impact of gonadotoxic cancer treatment on fertility. Advanced practice providers (APPs), a software developer, and the quality director at a private, community oncology practice designed and led an initiative to improve fertility preservation concordant with National Comprehensive Cancer Network (NCCN) guidelines. APPs educated the multidisciplinary team on fertility preservation, created a standard practice to identify candidates, conduct needs assessments, counsel, educate and refer AYAs with cancer. **Methods:** The project team met with a local reproductive endocrinologist to learn more about fertility preservation, time frames for patient care, and expedited referral processes for AYA patients. This meeting along with NCCN guidelines established the framework for identification, documentation, and referral process. To identify AYAs for fertility preservation discussion, an initial review of current new patient referral activities and data points was conducted by the project team. With assistance from the software developer, an automated report was created to identify patients based on age, oncology referral, and new patient appointment status. A weekly list was generated and stored on an internal SharePoint site for manual distribution to APPs by secure email. As a result of stakeholder feedback, this process has been refined to include automated report identification alongside secure email automation which notifies APPs daily, thereby reducing the likelihood of unidentified patients. **Results:** From the eight-month pilot period, 133 AYAs were identified as eligible for fertility preservation discussions and/or referrals. During this time, 20 patients (15%) accepted referrals for fertility preservation consultation with a reproductive endocrinologist. These referrals represent at least a 150% increase in referrals when compared to the calendar years 2020 and 2021. In comparing average referrals per month, the pilot period revealed an increase of over 250%. Of the remaining identified patients, 18% declined referral and 67% were ineligible for referral due to factors such as diagnosis other than cancer, previously addressed fertility needs, or sterility. In addition, < 1% of eligible patients were placed on ovarian suppression protocol per provider discretion. **Conclusions:** An APP-driven fertility preservation initiative mitigated an unmet need in the AYA population in the community setting. APPs are uniquely positioned to minimize long term effects of cancer care in fertility for this underserved population. Through automated identification, APPs were able to facilitate counseling and referrals with over a two-fold increase during a pilot period. **Recommendations:** Implementing a fertility preservation program as the standard of care within community practice should be a mainstay of care among the AYA population to provide comprehensive, quality care. Inefficiencies identified during process development facilitated changes throughout the pilot. The inclusion of automated reports and notifications is integral in the success of patient identification to ensure prompt counseling and referral driven by the APPs.

JL1012C

Empowering Patients With the Advanced Practitioner as a Vital Member of a Novel, Independent, Oncology Advisory Service

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Background: Patients with cancer face a significant amount of stress revolving around diagnosis, treatment options, and emotional/financial impact. Both academic and community oncology practices have increasingly less time to spend with patients, potentially resulting in unanswered questions and increasing anxiety. The purpose of this program is to provide a supplemental oncology advisory service that reduces stress and anxiety, increases quality of life, and facilitates superior patient outcomes. The team composition of MD-AP-RN was intentionally de-

signed to take advantage of each discipline's distinct areas of expertise. One oncology AP specific skillset is supportive care pertaining to toxicity management and psychosocial care. These traits combined with the MD's and RN's skills, provide holistic oncology care and added value without adding financial distress. **Methods:** This program was developed after identifying deficiencies in the care of cancer patients within the local community. Most advisory/second opinion programs see patients with the intent of assuming their care. This program flourished from the idea of supplementing the care of the current treating oncology team, from an advisory/non-competitive approach, without cost to the patient, in an attempt to improve the level of cancer care across all systems in the area. Patients are seen in consult simultaneously by the MD/AP/RN team. A comprehensive history and full head-to-toe physical are completed in addition to a review of records from time of diagnosis. Patients are given a 2-hour block to ensure proper understanding of their diagnosis and time to ask all questions. During this time the AP assesses psychosocial cues, identifies potential toxicities, educates on potential treatment options, supplements discussion of cancer biology to ensure patient comprehension, and aids in gathering history, all while performing a needs assessment. After the visit, a review of the current literature and clinical trial search (when applicable) is completed. A formal consult is sent to the primary team and the patient and the plan is directly communicated by phone between clinicians. During this time and ongoing, the AP serves as a resource to the patient. **Findings:** Goal achievement was assessed by surveys sent to both the patient and primary oncology team. From 01/2020-01/2022, 56% (300/534) of surveys were returned.Results from patients following their consult, 1=lowest, 5=highest:Confidence in recommendations: 4.67/5Confidence in current plan of care: 4.76/5Relationship with treating physician(s) strengthened: 4.0/5Overall value of consultation: 4.96/5**Conclusions:** The data paralleled the positive impact our care model had on patient experience. These results stress the importance of the APs role in an advisory program. **Proposal:** AP to develop tool that prospectively measures the impact of the advisory consultation on disease management and patient outcomes. **Innovation**: Our experience indicates the value of a non-competitive oncology advisory program that supplements the care of the primary oncology team. The program identified a need in the care of the oncology patient and developed a novel strategy to meet that need without adding financial burden.

JL1013C

Examining the Role of Psychological Safety and Its Relationship With Clinician Well-Being Among Advanced Practitioners

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Background: As health care continues to evolve in the United States, there has been a growing emphasis on providing high-quality, team-based care, especially in the care of cancer patients. Advanced practice providers (APPs), including physician assistants (PAs) and nurse practitioners (NPs), have helped to bridge the gap to meet the demand of patient oncology needs; however, APPs remain at a higher risk of developing clinician distress and burnout. To address a "system in crisis," particularly during the COVID-19 pandemic, teamwork and effective team functioning may be a necessary solution. Psychological safety (PS) may be a contributing factor that affects team engagement in health care. Studies among PAs in oncology have demonstrated that high burnout rates could be associated with team leadership factors, such as the PA relationship with the collaborating physician (CP), as well as their leadership qualities. Among APPs in oncology care, the question remains whether PS correlates with clinician well-being (WB), including the risk of distress and adverse work-related outcomes. **Purpose:** This study aimed to examine the professional characteristics and team leadership factors that may contribute to PS among oncology APPs and determine whether PS was related to clinician well-being (WB). **Methods:** A national, web-based, cross-sectional survey of oncology APPs from two leading oncology APP professional societies was completed during a 60-day study period in the setting of the COVID-19 pandemic in early 2021. Descriptive statistics were obtained, followed by a series of bivariate tests

to identify which demographic, professional, and team-leadership variables were significantly related to the dependent variables, PS and clinician WB. All explanatory variables that demonstrated a statistically significant relationship with the dependent variables were included in the third phase, multivariate analysis using multiple linear regression models. Lastly, since this study was conducted in the setting of the COVID-19 global pandemic, respondents provided context to their responses through two open-ended questions. **Results:** The study consisted of 84 oncology APPs who completed the survey, and 28.6% (n = 24) reported WBI scores within the high-risk group of distress. On final multivariate analysis, high PS scores were associated with high leader inclusiveness and leader-member exchange (LMX) scores, and low PS scores were related to those within the high-risk group of distress. Study participants in hematology-oncology specialty were five times more likely to be within the high-risk group of distress compared with those in the medical oncology group. Participants with high PS scores had a reduced likelihood of being in the group with a high risk of distress. **Conclusion:** Among oncology collaborative practice teams, APPs play a crucial role in providing high-quality patient care, but they remain at increased risk of developing clinician distress. Team-leadership factors affecting APPs may contribute to low PS, which may also be associated with low clinician well-being. Efforts to optimize clinician well-being should also address effective team functioning, team engagement, and leadership development.

JL1014C

Hematology Oncology Fellowships: A New Frontier for Advanced Practice Providers

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Background: Advanced practice providers (APPs), namely nurse practitioners (NPs) and physician assistants (PAs), play an integral role in the delivery of oncologic services. In recent years, numerous APP fellowships in hematology oncology have emerged across the nation. The aim of this study was to identify the existing APP fellowship programs in the United States and report on the structure and curriculum of these established programs for interested learners. **Methods:** The electronic databases of Google were searched for the information from fellowship websites and Indeed job postings. An integrative systemic review was conducted for peer-reviewed publications on fellowship education in PubMed, Medline and CINAHL. Emails were sent out to fellowship leadership to fill in missing information regarding program content and initial cohort date. **Results:** A total of 22 institutions across 14 states were identified offering 34 fellowship concentrations from the following categories: hematology and stem cell transplant (4), solid tumor (2), combined hematology and oncology (17), surgical oncology (4), pediatric oncology (2), geriatric oncology (1), critical care oncology (2), neurology/neurosurgical oncology (1), and psychiatry oncology (1). 5 fellowships accept only NPs, and 2 fellowships accept only PAs. The duration of most fellowships is 12 months except for 2 programs, one of which is 3 months, and the other is 13 months. Either a stipend or salary is provided by each program. All programs offer didactic curriculum and various specialty-focused clinical rotations. There were only 5 institutions offering APP fellowships before 2018. The vast majority of programs were launched within the past 3 years. **Conclusions:** Numerous medical centers across the country have launched fellowships offering diverse clinical rotations, didactics, and research opportunities to train the next generation of APP leaders in cancer care. **Recommendations:** The increasing complexity of oncology practice, coupled with an aging physician workforce and patient population, has placed tremendous demand on existing cancer care infrastructure. The traditional on-the-job training model has been insufficient for APPs new to oncology practice, with many APPs reporting that structured training would enhance their knowledge, clinical confidence, and job satisfaction. Post-graduate fellowship training has become a promising educational model to fill gaps in subspecialty education and prepare APPs for successful transition to practice. Collaboration among these fellowships in the future may lead to standardization, pan-accreditation, and hematology/oncology board certification for both NPs and PAs.

JL1015C

Implementation of an Advanced Practice Provider Career Pathway at a Major Metropolitan NCI-Designated Comprehensive Cancer Center

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Background: Implementation of career pathways improves Advanced Practice Provider (APP) relationships with physicians and patients as well as job satisfaction, contributes to institutional Magnet recognition, increases retention, and promotes ongoing professional development. While institutional cost and return-on-investment of career pathways have not been well reported by current APP literature, successful examples can be drawn from the nursing profession. A large cost savings was noted at Akron's Childrens Hospital for a nurse progressing through the career pathway program of $730 compared to the replacement of a newly hired nurse annual salary ranging between $82,000-$88,000. Additionally, a career pathway program for nurses was introduced to the Inova Health System in Virginia and job turnover rates decreased from 8.9% to 5.2% and job satisfaction rates were improved by 21%. The APP Professional Development Council (PDC) at a major metropolitan National Cancer Institute- designated comprehensive cancer center was tasked with the objective of developing a career pathway for APPs with a clear application, transparent evaluation criteria, and a peer review board to align with the physician and nursing models already utilized within the institution. **Methods:** The council conducted a literature search using the electronic database, PubMed, with the terms "professional development" OR "clinical ladder" OR "clinical pathway" AND "advanced practice providers" OR "nurse practitioner" OR "physician assistant." A total of eight manuscripts were identified and reviewed by individual group members, and a matrix was created. From this matrix, the council compiled a summary outlining common themes, theory application and overall structure. Additionally, the council performed a multicenter assessment of APP career advancement pathways at key institutions. **Results:** The PDC incorporated tenants of The Strong Model of Advanced Practice Nursing and Benner's from Novice to Expert Model to create the Memorial Sloan Kettering Cancer Center (MSK) that meets the distinct needs of MSK APPs named The MSK APP Ascend Program. The program consists of a four-tiered advancement pathway with over 70 enrichment steps to accrue eligible points over a one-year period. The enrichment steps are derived from seven domains of practice encompassing the variety of professional initiatives APPs perform outside of their role responsibilities. The domains, adapted from The Strong Model of Advanced Practice Nursing, to create the MSK ADVANCE Model© include Direct Comprehensive Care, Research, Driver of Change, Education, Professional Development and Leadership, Technology and Innovation, and Mentorship. When APPs reach Level IV, they choose to specialize in one of the three focused tracks, Education and Professional Development, Research and Quality, and Technology and Informatics. **Conclusions:** The APP PDC was tasked with the goal of creating an inclusive career pathway, promoting advancement and excellence among APPs to complement and enhance professional growth. The council created the MSK APP Ascend Program to highlight APP engagement in professional development, create a formal pathway for promotion and recognition, and establish a foundation for the development and advancement of ongoing APP practice. **Recommendations:** The development of an APP career pathway has the potential to support evidence-based practice, increase job satisfaction, encourage recruitment and retention of motivated and competent employees, provide mentorship, capture professional accomplishments, identify and create a roadmap for developing leaders, motivate APPs to establish career goals and gain entry to doctoral programs, and encourage scholarly work.

JL1016C

Implementing Antineoplastic Prescribing for Advanced Practitioners (APs)

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Background: Advanced Practitioners (APs) are a well-prepared, masters or doctoral degree edu-

cated individuals, many with extensive experience within their team. APs role in prescribing antineoplastic therapy is widely variable at this time from institution to institution. Little is published outlining process and requirements at this time. In 2017, Ohio revised code was updated to remove barriers for APs prescribing practices. Although this regulatory change occurred, antineoplastic therapy prescribing was still restricted to only physicians in our academic institution. **Methods:** Our AP leadership team collaborated with a multidisciplinary team of professionals to establish a proposal for advancing practice to support prescribing of antineoplastics to include APRNs, PAs, and Clinical pharmacists. The task force met over a 3-month period of time to outline the requirements for the APs, roles and responsibilities of the APs, as well as a quality assurance process. An inventory of institutions participating in chemo prescribing were identified and contacted for collaboration of processes and potential requirements. **Results:** After collaboration and consideration, the requirements for eligibility for prescribing antineoplastic therapy were decided to be: 2 years of experience in oncology; managing patients on active chemotherapy; acknowledgement/agreement form signed by the Disease Program Director/Site Physician; completes/passes chemotherapy examination; 50 questions prepared by the multidisciplinary task force; completes a proctoring period consisting of 50 prescriptions cosigned by the physician sponsor. The scope of prescribing includes: subsequent antineoplastic orders of any route, inpatient and outpatient, main campus and regional facilities who report through the cancer center, Ohio locations. Out of scope prescribing includes: new start drugs/regimens, any orders requiring 2 signatures, clinical trial drugs, BMT preparative regimens, non-Ohio locations, or APs not reporting through the cancer center. **Conclusions:** Quality assurance is an essential component to building trust within the multidisciplinary team. It was determined the chemo pharmacist will have an electronic list of approved prescribers in order to appropriately verify the orders. The AP manager will perform 10 annual audits on antineoplastic ordering. Quality domains included in the audit are: chemo orders within the APs scope of practice, medically appropriate, guidelines/SOPs were followed, no serious safety events reported, documentation of collaboration in a clinical note as necessary. APs falling outside the SOP would be removed from prescribing antineoplastics. Anticipated outcomes when proposing this plan include: Improved workflow, limited missing orders, minimize patient wait times for unsigned orders, and improve patient and caregiver (physician, infusion nurse, etc.) satisfaction. Assessment of these outcomes will be addressed at 6 months and 1 year post implementation using internal metrics such as chair time, patient wait times, unsigned orders report, and qualitative interviewing with the multidisciplinary team. **Implications:** The APs role in prescribing antineoplastic therapy can be an effective method of improving patient care in a variety of settings. Multidisciplinary team buy-in and support can create a supportive and inclusive environment for practice changes to occur. As APs, we must continue to innovate new ways in order to work at the top of license and growing our roles by providing highly reliable, quality care for patients as well as on our teams. Sharing oncology processes within a professional organization is vital to growing as a specialty and building a foundation of standards to hold in our practice.

JL1017C

Importance of Germline Testing in Colorectal Cancer Patients

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Background: Most commonly, colorectal cancer (CRC) occurs sporadically. However, well acknowledged familiar cancer syndromes are also identified. Genetic susceptibility to CRC includes Lynch Syndrome, familiar adenomatous polyposis, MUTHY associated polyposis, and others. There are individuals that do not meet certain criteria, by lack of family history, polyposis, or age for genetic testing. These individuals are considered at average risk for developing CRC. Due to lack of national guidelines, identification of genetic testing in average risk individuals who have a diagnosis of colorectal cancer is not the standard of care. Identification of a germline pathogenic variant in already diagnosed cancer patients is usually not done. By identifying a germline pathogenic variant, it can lead to potential novel treatment options for patients, along with cascade testing of at risk family members. Cascade

testing can lead to early identification of a mutation in a family member which is essential for cancer prevention and early detection. **Method:** At Honor Health Research Institute, our main goal is to offer phase one clinical trial opportunities for patients. Most patients with CRC are referred to us to discuss clinical trial options. Regardless of patient's age or family history, all patients undergo germline testing. Germline testing was completed by using testing panel that consist of 64-91 genes. **Results:** A total of 150 patients with a diagnosis of CRC underwent germline testing. Forty patients were under the age of 50 years old. Despite lack of family history, pathogenic variants were identified in 14 patients. The most common mutations were MUTHY and CHEK2. Of interest, only 1 pathogenic mutation was identified in a patient under 50 years old. A variant of unknown significance (VUS) was seen in 66 patients. Seventy patient had negative results. All patients with a pathogenic mutation underwent genetic counseling with appropriate testing of family members. Cascade testing of family members within 90 days of a patient's test report was completed free of charge this cascade testing resulted in identification of mutations within family members. Patients with a VUS or negative test results were informed of the findings and provided a written copy of the report. **Conclusion/Recommendations:** We recommend that all patients with a diagnosis of CRC, regardless of age and family history, undergo germline testing. An understanding of a patient's germline genetics can be beneficial to identify new treatment options. With the rapid changing landscape of genetics, it is of utmost importance that national guidelines be established. Our patient's data is housed in a national database. A reclassification of a patient's VUS is possible. With cascade testing to identify family members that are high risk for developing cancer, screening methods can be tailored to their mutation.

JL1018C

Incidence of Venous Thromboembolism and Patterns of Anticoagulation in Patients with Monoclonal B-Cell Lymphocytosis and Chronic Lymphocytic Leukemia: A Population-Based Study

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Purpose: Though malignancy is a known risk factor for VTE, little data exists specific to VTE in MBL/CLL; prior studies have often lumped MBL/CLL in with other hematologic malignancies. We aimed to better characterize the risk of VTE specific to MBL/CLL. **Methods:** We identified individuals with newly diagnosed MBL/CLL between 1998-2021 within 27 counties surrounding Rochester, MN. Patient demographics, VTE incidence, and anticoagulation data were identified using the Mayo Clinic CLL Database and electronic health record. Risk of VTE was estimated using Cox proportional hazards model; unadjusted cumulative risk of VTE was estimated using Kaplan-Meier methods. Rate of incident VTE among age- and sex-matched population in Olmsted County, MN from 2001-2015 was pulled from the Rochester Epidemiology Project, and compared to patients with MBL/CLL. **Results:** We identified 946 patients with newly diagnosed MBL/CLL; 42 were excluded due to prior history of VTE. Of 904 remaining subjects, 293 had MBL and 611 had CLL. Median age was 69 years (range, 28-96 years) and 587 (65%) were male. After median follow-up of 6 years (range, 1 day-23years), 70 patients developed VTE (43 DVT; 24 PE, 4 DVT/PE)). Risk of VTE was similar in CLL compared to MBL [HR(95% CI)=0.90(0.49-1.65)]. The 5-year and 10-year cumulative risk of VTE was 4.9% and 11.5%. Forty-seven (68%) patients had provoking factors including second active malignancy (n=21), surgery (n=9), hospitalization (n=6), travel (n=4), trauma (n=3), line-associated VTE (n=3), and immobility (n=1). Age-adjusted VTE incidence rates for females and males with newly diagnosed MBL/CLL were 1275 and 1228 per 100,000 person-years, compared to 193 and 218 per 100,000 person-years in the general population. Overall VTE incidence rate in females and males after MBL/CLL diagnosis was 6.0 (95% CI:4.0-8.8) and 5.7 (95% CI:4.1-7.7) higher than the general population.Sixty-three patients received anticoagulation; 7 did not due to hospice transition (n=4), bleeding (n=2), and thrombocytopenia (n=1). Regimens included warfarin (n=32), apixaban (n=12), rivaroxaban (n=9), low molecular weight heparin (n=8), and unfractionated heparin (n=2). Forty-seven patients received time-limited anticoagulation at first VTE (median duration 3 months), 10

of whom experienced recurrent VTE. None of the sixteen patients placed on indefinite anticoagulation at first VTE experienced recurrence within the study period. **Conclusions:** In this large population-based cohort study, 1 in 12 patients with MBL/CLL developed VTE after median follow-up of 6 yrs. Patients with MBL/CLL demonstrated a 6-fold increased risk of VTE compared to age- and sex-matched general population. Over 2/3 of MBL/CLL patients had provoking factors at time of VTE, especially second active malignancy. No patients placed on indefinite anticoagulation at first VTE experienced recurrence, but ~20% of patients who received time-limited anticoagulation experienced recurrent VTE.**Implications:** Clinicians should be aware of increased risk for VTE in patients with MBL/CLL, prompting increased vigilance and patient education surrounding VTE in this population, particularly those with active second malignancy, hospitalization, surgery, or prolonged travel. Importantly, warfarin is contraindicated with BTK inhibitors and direct oral anticoagulants are preferred; dose modifications of BTK inhibitors and/or DOACs may be necessary due to concomitant risk of bleeding.

JL1019C

Infusion Center Pilot Program for Patients with Multiple Myeloma

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Background: Multiple Myeloma (MM) is an incurable cancer. Patients make frequent trips for chemotherapy infusions. Delays within the infusion center to prepare drug or wait for lab results can add up to weeks for patients over the course of their disease. The goal of the Infusion Center Pilot Program was to reduce wait times for MM patients receiving treatment in the infusion center while not increasing cost to the medical center with pre-made medications that were not used. This quality improvement (QI) project was created with the MM care team (physician, oncology advanced practice provider and registered nurse), clerical staff, infusion center nursing, and pharmacy. **Methods:** Stable patients (without unplanned dosing adjustments within 3 months) were eligible to participate. Participants were required to have labs drawn up to 3 days prior to treatment and notify clerical staff that labs were drawn, they were not ill, and planned to come to the appointment.The oncology advanced practice provider was alerted to the phone calls, highlighted these patients, and signed the treatment plan. Pharmacy staff then prepared the medication for infusion prior to the patient's planned appointment.MM patients are seen by a provider in the outpatient clinic at the start of each cycle. This visit is when dose adjustments or treatment changes would be likely to occur. This program was only implemented on days patients were not seen in clinic to reduce costs of unused medications. **Results:** Eight patients initially enrolled in the Infusion Center Pilot Program. The wait time to drug infusion was counted from the moment the patient checked into the infusion center to the time the chemotherapy was scanned by the nurse for administration. Wait times for the same patients were compared for 4 infusion treatments prior to and after participation in the study. Same day control wait times for patients getting the same drug within 1 hour of the appointment of participating patients were also compared. Of the 8 participants, 6 patients successfully had their multiple myeloma treatment(s) made in advance while 2 patients unfortunately did not because of miscommunication in pharmacy.Of the patients who successfully had treatments made ahead of time, 5 were treated with carfilzomib and one with bortezomib. The 2 patients who did not have treatment prepared ahead of time were treated with daratumumab. There was a decrease in wait time for matched controls and in wait times for the same patient prior to and after participation in the pilot program. Labs drawn ahead of time if treatment was not prepared in advance did not decrease wait times for patients compared with patients who had labs drawn the day of treatment. **Conclusions:** The institution of this program making chemotherapy prior to patient appointment times resulted in decreased time in the infusion center by patients. Our calculations showed a significant reduction of wait times in the infusion center compared to both average and same day controls. Due to these successful outcomes, an additional 37 patients have participated. **Recommendations:** We propose infusion centers prepare chemotherapy prior to pa-

tient arrival. Teams including the infusion center, physicians, oncology advanced practice providers, pharmacy, and clerical staff can create individual center work flows. Making sure all teams are in agreement is important for the program to be successful. **Innovation:** Infusion center wait times were reduced with continued measurable data.

JL1020C

Intermittent Fasting During Systemic Therapy: Evidence for the Oncology Advanced Practitioner

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Background: Nearly 48% of patients with cancer actively seek health benefits from special diets as a way to improve disease outcomes (Zick et al., 2018). Intermittent fasting has increased in popularity among patients with cancer as an adjunct to chemotherapy. Intermittent fasting encompasses a wide spectrum of dietary patterns involving episodes of calorie restriction or calorie reduction over a set period of time. However, limited research is available examining the feasibility, safety, tolerability, and treatment effect of intermittent fasting during chemotherapy. **Objective:** · Evaluate the evidence of fasting on patients with cancer undergoing systemic therapy · Identify limitations in the research to provide oncology advanced practitioners (AP) with evidence-based information to guide clinical decision making. **Methods:** A comprehensive literature search was conducted using Ovid MEDLINE®, Ovid Excerpta Medica Database (EMBASE®), and the Cumulative Index to Nursing and Allied Health Literature (CINAHL®) databases. The search utilized a combination of Medical Subject Heading (MeSH) terms and keywords for various spellings and/or terminology related to cancer, fasting, and chemotherapy while following the Population, Intervention, Comparison, Outcome (PICO) framework (Brown, 2020). A systematic approach was used to identify and screen research studies following the Preferred Reporting Items for Systemic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021). Five hundred and fourteen articles were identified from the three databases. Seven studies remained after applying inclusion and exclusion criteria: three randomized control trials, one randomized crossover trial, one controlled crossover trial, and two prospective cohort studies. **Results:** The seven articles identified for final review examined four outcomes essential to understanding how fasting impacts patients with cancer and cancer treatment: fasting compliance, malnutrition, therapy side effects, and cancer outcomes. Data suggests overall good compliance, no malnutrition, minimal side effects, and mixed results for cancer outcomes. Limitations of the seven studies included small sample size, bias toward gender, race, and cancer type, interventions involving only normal weight patients with body mass index (BMI) > 18 kg/m^2, variation in fasting protocols, and short-term follow-up surveillance. **Conclusion**: Intermittent fasting as adjunct to chemotherapy in normal weight patients with cancer has the potential to be a feasible, safe, and tolerable nutritional intervention. However, these findings are less generalizable to the greater oncology patient population given the limitations identified among the current available literature. There is not enough evidence to support intermittent fasting as a nutritional intervention to improve disease or treatment outcomes. **Recommendations:** Large-scale randomized controlled trials are needed to validate the current findings and determine what future role intermittent fasting may play in cancer management. Oncology APs should use caution when considering the use of intermittent fasting in adjunct to chemotherapy.

JL1021C

Interprofessional Analysis and Revision of an Oral Antineoplastic Medication Adherence Toolkit

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Background: The increasing use of oral anticancer medication offers state-of-the-art cancer treatment combined with the convenience and autonomy of self-care in the home. Many institutions lack a formal oral anticancer medication program, including a process to assess and monitor adherence. Without a formal program, nurses and their colleagues often look to their specialty associations for the literature, training, and collaboration with colleagues to support their adherence work. The

Oncology Nursing Society (ONS) provides online resources including evidence-based guidelines, care strategies, and toolkits to support safe, high-quality care. To better reflect current best practice, the ONS Oral Adherence Toolkit, released in 2016, required an update. **Methods:** Nurses and pharmacists from across the U.S. participated in a preimplementation survey, followed by two focus groups in the summer of 2021. These professionals provided detailed recommendations on changes that were needed to the toolkit. **Interventions:** Utilizing baseline survey results, expert feedback, and evidence-based literature, it was determined that of the 14 tools in the Oral Adherence Toolkit, one tool should be removed and 13 revised. Two new tools were added, resulting in 15 distinct tools in the newly named Oral Anticancer Medication Toolkit. A post-implementation survey of nurses and pharmacists collected data on whether the new tools would be applicable to practice. The revised toolkit was deployed on the website of the specialty nursing organization. **Results:** Post-survey assessment by expert reviewers indicated that 14 of the 15 tools in the revised toolkit improved in relation to the applicability to practice. The new toolkit was deployed on the organizational website in February of 2022. In the first 2 months, the toolkit was downloaded nearly 1500 times. **Conclusions:** Nurses and their colleagues require resources available to support the care of individuals taking oral anticancer medications. The revised toolkit provides evidence-based, relevant, tailored resources to support practice.

JL1022C

Lesbian-, Gay-, Bisexual-, Transgender-, Questioning- or Queer-, Intersex-, and Asexual-Inclusive Health Care Versus Traditional: Comparing Patient Satisfaction

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Study Aim: The aim of this study was to evaluate the difference in patient satisfaction scores between lesbian, gay, bisexual, transgender, questioning or queer, intersex, and asexual (LGBTQIA+) individuals who receive healthcare from LGBTQIA+ inclusion clinics and LGBTQIA+ individuals who receive healthcare from traditional clinics. **Background:** LGBTQIA+ individuals encounter considerable social and structural inequalities, such as discrimination, exclusion, oppression, and stigmatization. These pervasive inequalities persist as major barriers to high-quality healthcare and place LGBTQIA+ individuals at significant risk for health-related disparities and inequities, poor health outcomes, and overall poor health status due to their sexual orientation and gender identity. Mitigating these health-related disparities and inequities necessitates healthcare settings that are inclusive, safe, and affirming, and nursing professionals that are LGBTQIA+ culturally competent and sensitive. Creating an inclusive and affirming environment in which LGBTQIA+ individuals can establish trust and open and honest communication with their healthcare providers can improve provision of care, patient satisfaction, and their health and well-being. **Theoretical Framework:** This study was guided by the Health Equity Framework, centered on three foundational concepts: equity at the core of health outcomes; multiple, interacting spheres of influence; and a historical and life-course perspective. **Methodology**: Study protocol review and approval were obtained from Edinboro University's Institutional Review Board. This study was an on-line questionnaire study and was conducted using a nonexperimental, nonrandom, cross-sectional study adhering to a quantitative methodology. A nonrandom convenience sample of LGBTQIA+ individuals (n=56) was selected, and study participants were invited to participate in this study via an on-line survey link by way of Qualtrics. Data were collected using the Short-Form Patient Satisfaction Questionnaire (PSQ-18). **Results:** To test for differences in patient satisfaction between groups, the independent samples t-test statistical method was utilized. There was not a statistically significant difference in mean values between groups. Due to assumption violations, the Communication sub-scale was tested using the independent samples Mann-Whitney U test to determine if the distributions in the two groups were significantly different from each other. It was found that the distributions in the two groups significantly differed. **Conclusions:** LGBTQIA+ inclusion health plays a critical role in improving patient satisfaction and the health and well-being of LGBTQIA+ individuals. **Implications for Nursing Practice:** Nursing

professionals play an integral role in transforming healthcare for LGBTQIA+ individuals and must align their practices with their professional duty of delivering equitable and culturally competent and sensitive care to LGBTQIA+ individuals. **Recommendations:** Further research is needed with larger sample sizes to investigate the relationship between receiving healthcare from LGBTQIA+ inclusion clinics and improved patient satisfaction and whether there is a difference in patient satisfaction between those who receive healthcare from LGBTQIA+ inclusion clinics and those who do not. Because study respondents who went to LGBTQIA+ inclusion clinics had significantly higher communication satisfaction than those who did not go to inclusion clinics, the impact of culturally competent communication on improved patient satisfaction should also be investigated further in future research.

JL1023C

Leveraging Technology to Develop a Series of Education Programs for Advanced Practice Providers at a Large Community Oncology Network

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Background: There is a rapid pace of clinical innovation in oncology and hematology, with new drug approvals and indications, biomarker testing, and other changes which affect clinical practice. This innovation requires ongoing educational initiatives for experienced advanced practice providers (APPs) to maintain their expertise and high level of functioning in clinical practice. APP new hires often come with additional needs for education related to oncology and hematology content during the onboarding process to achieve a high level of functioning in specialty practice. Meeting these educational needs across a large practice network with multiple clinics covering a broad geographic area across two time zones poses a challenge. APPs typically sought education by attending live conferences and industry-sponsored events but there was a lack of shorter programs with content controlled by APPs. **Purpose:** The purpose of this initiative was to develop a series of interesting and clinically relevant education programs tailored to oncology and hematology APPs at a large community oncology network. **Methods:** An APP education committee was formed and a chair identified to manage this initiative. An initial learning needs assessment was conducted using an online survey tool completed by 30 APPs. The survey demonstrated a preference for a both live and on demand educational programs. A monthly series of internal education programs was established. Survey results were used to select topics. An online conferencing application was used to make programs available live for APPs wherever they were located. The programs were recorded and video links were posted on a cloud-based platform for work management. This collection of videos has become a growing library of on-demand programs which are accessible from any device and available for use during onboarding of APP new hires. **Evaluation:** Between October 2020 and July 2022, there were 27 internal education programs for APPs on a wide range of topics including major cancer types, benign hematology, biomarker testing, genetic testing, palliative care, integrative oncology, and work life balance. The median attendance at live programs was 10, with additional participation on demand. Nineteen APPs across the network were engaged as presenters, with physicians and biomarker specialists also presenting. The initiative was evaluated by soliciting feedback from focus groups which revealed a preference for shorter length programs. A follow up survey was conducted approximately 2 years after the initial survey, with 28 APPs responding. Survey results affirmed heterogeneity regarding years of service among the APPs and confirmed the need for basic, intermediate and advanced content levels. The survey responses demonstrated an increase in engagement in live or on-demand virtual education programs. The majority of respondents (93%) reported participating in virtual programs only 0-1 time a month on average prior to the education initiative, but 71% reported participating in virtual programs 1-2 times a month, with 11% reporting participation 3-4 times a month after the initiation of the education programs. Most respondents agreed that programs included clinically relevant and interesting topics and were easy to access live or on demand. The follow up survey provided additional feed-

back regarding preferred times for live programs and suggestions for future topics. **Discussion and Innovation:** This education initiative has successfully provided education tailored to meet the needs of oncology and hematology APPs. The use of technology has allowed for broader engagement in live programs and provided a platform for access on demand.

JL1024C

Malignant Hematology Procedures Workshop: An Educational Pilot Project Utilizing Simulators

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Background: Advanced practice providers (APPs) who deliver care for patients with hematologic malignancies perform bone marrow aspiration and biopsies (BMBX) and lumbar punctures (LP) as part of diagnostic assessments and for the administration of intrathecal chemotherapy. Procedures are often taught through observational training methods which can lead to inconsistencies. **Problem:** The purpose of this project was to pilot an evidence-based procedures workshop to train new hire APPs during their orientation through the use of instructional design with educational curriculum and task trainers. The project aimed to increase APP self-reported confidence and to collect participant feedback. **Methods:** Workshops took place during the seventh week of the twelve-week orientation. Pre- and post-program surveys were utilized to collect baseline data on procedural knowledge, overall self-reported confidence, and feedback. Each program was delivered over four hours and included educational PowerPoints followed by five breakout sessions: BMBX kit review, LP kit review, specimen collection procedure, and simulation of each procedure. Surveys were compared through descriptive and statistical analysis. **Results:** On qualitative surveys, 100% of participants reported the Procedure Workshop enhanced their understanding and overall confidence to perform LP and BMBX procedures. **Conclusions:** Exposure to invasive bedside procedures such as BMBX and LP through the use of simulators can increase APP confidence prior to first live patient experiences. The use of simulators is cost effective and more sustainable as compared to use of cadavers. **Implications:** This single institution pilot project displayed that the use of simulation with task trainers is beneficial when paired with instructional design. Simulation training specific for APPs is beneficial, cost-effective, and can be replicated within other institutions where APPs perform BMBX and LPs.

JL1025C

Optimizing Outcomes for Patients With Pancreatic Cancer

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Background: Patients with pancreatic ductal adenocarcinoma (PDA) experience many symptoms due to disease and/or chemotherapy including pain, fatigue, weight loss, nausea/vomiting (N/V), and change in bowel habits, and require frequent assessment and intervention. Knowledge of the best practices in the prevention and treatment of these symptoms by the advanced practice provider (APP), can minimize symptoms, improve patients' quality of life (QOL), tolerability of anticancer therapy, and clinical outcomes. **Interventions:** In our oncology research center seeing over 200 PDA patients annually, we share management strategies for common symptoms based on published reports, national guidelines, and our clinical experience. In preventing and treating nausea and vomiting (N/V) related to disease and chemotherapy, the addition of olanzapine to antiemetic protocols has proven to be effective. For fatigue, evidence-based interventions including Wisconsin Ginseng and exercise have been beneficial. Frequent IV hydration, when not contraindicated, can decrease fatigue in patients who are chronically dehydrated. Symptoms of exocrine pancreatic insufficiency including early satiety, post prandial pain, diarrhea and weight loss are often undertreated. Many patients with these symptoms will note prompt marked improvement with the addition of the proper dose of pancrelipase. For anorexia, a referral to an oncology dietician is critical for tailored meal planning and nutritional support. Off-label use of low dose mirtazapine has been utilized as well. Given the high risk for thromboembolism in these patients, we do not recommend megestrol

due to the added risk of clotting. Pain management can be complex requiring interdisciplinary collaboration and varying treatment modalities, such as opioids, nonpharmacologic interventions, intrathecal pain pumps, etc. A new treatment regimen for patients with locally advanced and metastatic PDA including albumin bound paclitaxel, gemcitabine plus cisplatin that originated in our center, was added to the National Comprehensive Cancer Network guidelines in 2022. As reported in Jama Oncology, in 25 patients with advanced pancreatic cancer treated on this regimen, 71% experienced disease response including 2 complete responses, median time to progression was 10.1 months, and median survival was 16 months. We also noted in those patients with disease response, a prompt improvement in disease-related symptoms including pain. As more patients are now receiving this regimen, the APP needs to be aware of management strategies specific to this protocol including nausea prevention, adequate hydration, use of steroids, blood glucose management, and the timing and use of growth factors to support bone marrow function. **Outcome Measures:** The goals of APP interventions in the care of patients with PC, when providing prompt recognition and management of symptoms, are to improve patients' QOL and facilitate continuing dose intensity of treatment to maximize therapy response. **Summary:** APPs are front line in the care of patients with PDA. Current evidence-based practice in symptom management can significantly impact the patient experience and clinical outcomes. **Recommendations:** Patients living with PDA typically experience numerous symptoms requiring complex interdisciplinary management. APPs caring for these patients must stay current with new treatment strategies and symptom management recommendations which will be further described.

JL1026C

Pivoting During a Pandemic: Creation of an Oncology Procedure Team

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Background: Bone marrow biopsies and lumbar punctures (LPs) are vital procedures in diagnosing, monitoring, and treating hematologic malignancies. Prior to the onset of the COVID-19 pandemic in 2020, our tertiary academic center's elective procedures were booked out months in advance and patients with urgent needs had to be overbooked, putting undue stress on the entire system. While the outpatient clinics had template availability, there were not enough providers to perform oncology procedures. **Objective:** We aimed to re-deploy inpatient advanced practice providers (APPs) to improve access to inpatient and outpatient procedures while maintaining consistent staffing of the inpatient APP services. **Methods:** During the first wave of the pandemic in early 2020, the inpatient APP Cellular Therapy Service (APP-CT) census was intentionally lowered due to concerns for safety with proceeding with stem cell transplants and cellular therapies. In May 2020, to better utilize the team's staffing resources, the APP-CT service piloted an Oncology Procedure Team to perform bone marrow biopsies and LPs in the adult inpatient and outpatient settings. APPs on APP-CT volunteered as proceduralists for overstaffed shifts and a procedure schedule was created and emailed to outpatient support staff. A virtual Hematology-Oncology Procedure pager was carried 7 days/week, used for both inpatient and outpatient procedures. APPs credentialed on bone marrow biopsies and LPs trained new APPs to increase the number of trained proceduralists. **Results:** By shifting qualified inpatient APPs that would otherwise have been overstaffed, we were able to increase capacity and access for essential procedures. The monthly average of procedures pre-intervention was 87.4 with APP-CT performing 17% of procedures. The monthly average of procedures post-intervention was 105.8 with APP-CT performing 23% of procedures. Post-intervention, APP-CT revenue for bone marrow biopsies and LPs with intrathecal chemotherapy was $582,311 without the creation of any additional positions. Lastly, hematology/oncology fellows (HONC) that were in need of bone marrow biopsy training for their fellowship program were able to train with APPs. **Conclusions:** The creation of the Oncology Procedure Team re-deployed staff during the COVID-19 crisis, increasing access to necessary oncology procedures, relieving stress from the outpatient teams, training

HONC fellows, and utilizing staff in a creative and productive way that improved work satisfaction. We increased procedure availability and procedures performed, decreased the number of overbooked procedures added to busy outpatient providers' schedules, thereby eliminating scheduling stresses for staff at multiple levels of the system. We also increased APP job satisfaction for providers who desired to do more procedures, and increased ability to train new APPs on these procedures. **Implications:** We plan to continue to utilize inpatient APPs to expand the Oncology Procedure Team to cover outpatient procedure templates, with availability to assist with urgent inpatient procedures. Lastly, APP proceduralists are now being requested to train the new HONC fellows which demonstrates department-wide confidence in APP procedural skills.

JL1027C

Promoting Self-Care to Reduce Compassion Fatigue in Oncology Nurses and Advanced Practice Providers: An Evidence-Based Practice Implementation Project

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Purpose/Objectives: Oncology nurses and advanced practice providers (APPs) are at increased risk for compassion fatigue (CF) due to constant exposure to human suffering and the demand to provide compassionate high-quality patient care. This pressure has been compounded by the COVID-19 pandemic associated with institutional and system-wide constraints such as increased workloads, decreased funds, and ever-increasing patient acuity. The purpose of this evidenced-based practice (EBP) implementation project was to establish and implement a comprehensive CF support program to reduce CF and improve compassion satisfaction (CS) for acute care oncology nurses and APPs. The program used a multi-targeted approach, including screening, EBP self-care interventions and engagement with employer-provided tools. **Sample and Setting:** The sample included twenty-six nurses and APPs from an inpatient medical oncology unit at an urban NCI-designated cancer center. Program held during the Fall of 2021.**Methods and Variables:** This Doctor of Nursing Practice (DNP) EBP implementation project was delivered in three phases. The pre-intervention phase included a demographic and ProQOL 5 surveys and a pre-program knowledge test. The intervention phase consisted of EBP self-care education and strategy sessions held live and recorded over Microsoft Teams. These sessions included multidisciplinary efforts including social workers, a therapist, and integrative medicine therapists. Post-intervention phase followed and included a post-program ProQOL 5 survey, program evaluation survey, and a three-month follow up survey. Descriptive and inferential statistics conducted with paired samples t-test and Wilcoxon signed rank test. Main research variables included compassion fatigue, burnout, secondary traumatic stress, and compassion satisfaction. **Results:** Participants subjectively reported less stress and increased job satisfaction while also demonstrating statistically significant differences in ProQOL 5 subset scores for CF, Secondary Traumatic Stress (STS), and CS. Participants also demonstrated an eleven times increase of employer-provided tools. **Implications for Nursing:** Awareness of the phenomenon of CF or available resources does not translate into engagement with employer services or self-care. A dedicated nurse-led multitargeted CF support program can engage staff in self-care practice and utilization of employer services. This can reduce CF, improve CS, and may potentially improve professional quality of life. **Knowledge Translation:** CF is highly prevalent in oncology care providers, worsened by the COVID-19 pandemic. This requires urgent interventions to support and sustain a healthy workforce. A multi-targeted program with multidisciplinary efforts and utilization of technology can engage staff in self-care and employer-provided tools and improve provider wellness.

JL1028C

Role of the Advanced Practice Provider in a Multidisciplinary Colorectal Tumor Board

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Background: Colorectal cancer (CRC) is consistently one of the three leading cancer diagnoses in both men and women annually. While those with localized disease have a 5-year survival rate

greater than 90%, those with metastatic disease have drastically lower long-term survival. For select nonresectable metastatic CRC patients, liver transplant may offer improved 5-year survival rates. Advanced practice providers (APPs) are vital for communication, direct patient care, and patient advocacy, particularly when involved with multiple providers. The role of an APP in a multidisciplinary CRC tumor board is emphasized here. **Approaches:** In January 2022, a group of medical and surgical oncologists, transplant surgeons, CRC surgeons, and interventional radiologists at Ochsner Health formed a program for patients with CRC that metastasized to the liver. The program aimed to streamline patient management for this population within a multidisciplinary approach. As patients have historically been referred to specialists within the health system without a multidisciplinary overview of their specific case, this program has centralized and consolidated this workflow with the APP at its center. In addition, the program aimed to identify patients that may benefit from transplantation as a novel treatment option. Program specifics were discussed and implemented, including selection of an oncology APP to lead discussions, conduct intake visits, and organize patient data. Approximately 10-20% of the APPs clinical time is utilized in managing program patients and referrals, while remaining time is devoted to supporting the primary oncologists in gastrointestinal oncology clinic. **Results:** From March to July 2022, the tumor board evaluated 26 patients. The APP reviews medical records and conducts 90% of intake visits. She presents patients to the tumor board and documents the recommendations as discussed. Additionally, she coordinates patient care after meetings, including placement of needed orders or referrals. While networking in various locations, she advocates for and promotes the program with providers across additional departments and facilities. The program's short-term goal is to proceed with at least 1 liver transplant in 2022. While none are scheduled for transplant, 5 are under careful monitoring for future transplant opportunities. **Conclusion**: The colorectal liver metastases program within Ochsner Health is a newly developed entity dedicated to providing a multidisciplinary approach to CRC patients. The APP has been a significant resource for key operations including patient evaluation and screening, educating patients on the program's mission, leading discussions for bi-weekly conferences, managing records and ensuring appropriate follow up is scheduled. Once the program successfully guides its first patient to liver transplant, dozens of patients may benefit in the future as new treatment options are established. **Implications:** Utilizing an APP to navigate tumor board patients is cost-effective and feasible for large organizations. As the program continues to gain attention and expand, APPs will be a crucial aspect to maintaining records, coordinating referrals, and completing intake visits for patients. Future recommendations will evaluate benefits of liver transplant within this patient population, as well as specific training for the APP to help identify optimal patients, incorporate greater identification and tracking measures, and continuously evaluate program protocols.

JL1029C

Strategies for Optimization and Growth of an Oncology Symptom Management Advanced Practice Provider–Driven Clinic

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Background: Oncological treatments continue to evolve and improve outcomes of cancer patients. It is critical that cancer centers have specialized teams that provide early access to urgent management of toxicities and complications outside of the Emergency Department (ED). The Oncology CARE Clinic (OCC), a non-emergent symptom management Advanced Practice Provider-driven clinic, was originally introduced in May 2019. **Methods:** Single-center analysis of cancer patients who received care in the symptom management clinic with focus on how to optimize most common services rendered. Open discussions with providers were conducted via faculty meetings to determine barriers to OCC. Press Ganey® surveys were reviewed to capture voice of the customer. The ED and oncology team

collaborated to develop clinical pathways and establish criteria for triage nurses and providers on appropriate patients to be sent to OCC. **Results:** Four areas of opportunities were identified; (1) lack of awareness of location, hours of operation, and services available; (2) services offered did not meet demand; (3) limiting walk ins prevented patients from receiving needed care; (4) and lack of communication between OCC and referring providers. From July 2021 to December 2021, OCC saw 235 encounters with a daily average of 3 patients. Starting in December 2022, OCC underwent expansion of services allowing walk-ins, urgent peripherally inserted central catheter (PICC) removals, COVID positive patient supportive care or continuation of cancer treatment, and coordination of direct admissions. Marketing efforts were leveraged by implementing a website and additional signage to raise awareness and provide guidance for patients and providers. Communication was also strengthened by the creation of a Secure Chat via electronic medical record (EMR). These changes led to a 142% increase in daily average to 5 patients with a total of 571 encounters between January and June 2022. **Conclusions:** Identification of deficiencies and successful implementation of solutions led to significant expansion of access for cancer patients to early interventions of urgent symptomatic issues. Of importance, these initiatives highlight the capacity for APP-driven clinics to have a significant impact on cancer care and improving patient outcomes. **Recommendations:** OCC continues to look for opportunities to expand services. Developing a relationship with all hospital stakeholders to identify patients appropriate for the symptom management clinic can be a beneficial resource for optimization. It is also important to leverage patient surveys to understand where lies opportunities and reevaluate need for changes. **Innovation:** Multidisciplinary approach and collaborations between oncology and non-oncology stakeholders was imperative to address opportunities for OCC. Clinical pathways, marketing efforts and implementation of innovative tools such as Secure Chat via EMR led to successful growth and improved access to urgent supportive care.

JL1030C

OUTSTANDING POSTER AWARD WINNER

The Development of a Biomarker Database: Creating a Clinical Decision Support Tool for Oncology Nurses and Advanced Practice Providers

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Background: Precision medicine continues to be an area of focus and growth in oncology. With the ever-expanding world of biomarker testing and variant assessment, oncology nurses and advanced practice providers (APPs) are in need of educational resources and clinical decision support tools (CDS) to help provide current and evidence-based care to oncology patients. The Oncology Nursing Society (ONS) Biomarker Database was developed by oncology nurses, the majority of which were APPs, who are members of ONS and considered experts in their specialty areas. This CDS is specifically developed for oncology nurses and providers. **Methods:** A baseline survey of 700 ONS members conducted in early 2020 showed 45% did not feel confident talking to their patients or the healthcare team about genomics. This led to strategic planning and the identification of a gap in nursing practice that a biomarker point-of-care tool could fill. The Biomarker Database development started in April 2021. Subject matter experts were recruited through a volunteer application via the ONS Communities platform. Group discussions among experts and focus groups affirmed content to be included about each biomarker and cancer type based on current evidence. Once content was written, it went through a double peer review by additional experts and content consensus was reached by the panel. **Results:** The database was developed in response to a clear need for a comprehensive and evidence-based precision oncology CDS tool for oncology nurses and APPs. Each biomarker entry in the database includes information on the mechanism driving cancer growth, required testing, specific targeted therapies, available clinical trials, and implications for patient care. Data can be viewed by searching individual biomarkers, and then

sorted by cancer type, or by searching a specific cancer type and viewing all biomarkers associated with that disease. The Biomarker Database was launched on June 8, 2022. Since launch the site has seen an overwhelming positive response from oncology nurses with over 2,000 unique users accessing the database between June 1, 2022 – July 13, 2022, as well as over 10,000 views. As the tool is rolled out, end-users will be surveyed to measure usability, satisfaction, relevance to practice, and reported practice outcomes, to further focus and adjust the CDS. **Summary:** The Biomarker Database is a user friendly, content filled, first-of-its-kind CDS developed for oncology nurses and APPs. It currently includes 5 cancer types and over 100 biomarkers. The CDS tool content will be maintained and updated quarterly to stay up to date with new advances and evidence. By the end of the first quarter of 2023, the database is planned to contain approximately 25 disease sites associated with 250 biomarkers. **Recommendations:** We recommend oncology nurses and APPs use the Biomarker Database for personal education and growth, when educating patients on biomarker testing results, when discussing appropriate treatments and referrals based on biomarkers, etc. To access the ONS biomarker database: https://biomarkers.ons.org/.

JL1031C

The Development of an Advanced Practice Hematology, Oncology, and Palliative Medicine Fellowship: Improving Onboarding and Retention

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Background: Graduate level Advanced Practice (AP) curriculum has limited focus on Hematology Oncology and Palliative care. APs often enter the workforce unprepared to excel in these specialty positions. Onboarding new APPs can be time-consuming as well as costly. In our current AP oncology practice, it may take 6-12 months of onboarding for an AP to be able to manage complex diagnostics and treatment planning. APs that resign and transfer into another specialty generally do so within 1-3 years. Our AP practice has grown from 89 APs to 122 APs from 2019 to 2022. In addition, our AP practice experienced 19 resignations (38 when including internal institute transfers) from August 2020 to August 2022. This is thought to be due to lack of suitable training which detracts for oncology and palliative care as a lifelong specialty. This turnover can lead to persistent vacant positions and these positions historically are filled by novice APs with little to no experience due to limited previous exposure. **Approaches:** In 2022, the AP leadership team at Cleveland Clinic Taussig Cancer Institute developed and implemented a one-year Hematology Oncology and Palliative Medicine Fellowship for five new APs, starting in August 2022. AP leadership hypothesized that an AP fellowship would provide the foundation for proper onboarding, training, and application of knowledge into the field. The AP fellow will experience enhanced learning via blended educational methodology including: formal didactics, specialty rotations, simulation labs, online resources, professional and case presentations, online/textbook resources. The fellowship didactics focus on multi-disease pathophysiology, pharmacology, and diagnostics, prescribing practices, professionalism, and leadership. **Outcome Measures:** Preferred AP fellow graduates will fill vacant AP positions within the institute. Successful completion would be indicated by inter-professional evaluations, learning assessments, presentation critiques, and simulation lab critiques. With completion of the AP fellowship, programs will have a "ready to practice" AP join the team. We anticipate a favorable impact on AP vacancy rates, retention rates, AP satisfaction, increased specialized AP certifications, and an established academic culture for APs. **Summary:** Developing an AP Fellowship program will ensure trainees have dedicated time to learn in a classroom with engaged mentors, practice their skills with coaching in a simulation lab, engage with multidisciplinary teams, and then apply their education and experience to patients in our institute. This fellowship program will deepen their understanding of complex clinical scenarios and treatment planning and allow preferred fellowship graduates to fill vacant AP positions within the institute. **Applications:** In order to maximize return on investment when hiring new APs, minimum competency standards must be defined and

curriculum planning must be developed to ensure that Hematology Oncology and Palliative APs have the tools they need to succeed that are specific to the specialty for which they are hired. An AP Fellowship will formalize Hematology Oncology and Palliative AP training to ensure quality care is provided to patients, the organization is provided with competent and proficient APs who are ready to work, generate revenue, shorten vacancies, reduce turnover, and entrust APs are overall satisfied working in their specialty.

JL1032C

The Expanding Role of the Advanced Practice Provider in National Cancer Institute–Sponsored Trials

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Background: The mission of the National Cancer Institute (NCI), the federal government's principal agency for cancer research and training is to lead, conduct, and support cancer research across the nation to advance scientific knowledge and help all people live longer, healthier lives. The NCI supports the largest United States network of clinical trials through two programs: National Clinical Trials Network (NCTN) & NCI Community Oncology Research Program (NCORP). Historically, Advanced Practice Providers (APPs) had limited roles in NCI-sponsored research. Over the last two years, APPs have worked with representatives from the NCI and NCI Research Bases to remove barriers and create changes in policy and guidelines to permit APPs to have greater and more meaningful roles in NCI-sponsored trials, consistent with their scope of practice. **Methods:** 1. Representatives within the NCI worked with APPs, Nurse Scientists and Physicians from research bases to advocate for changes in the NCI guidelines and polices2. The SWOG Cancer Nursing Research Sub-Committee and Palliative and End of Life Care Committee launched a five-year APP Engagement project (funded by The Hope Foundation) which included: a. Conducting a two-hour APP symposium at the Spring 2022 SWOG meeting b. Planning an APP-specific workshop for the Fall 2022 meeting c. Developing an infrastructure and application procedures for a three-year APP task force to identify and implement strategies to remove additional barriers to APP involvement in cancer trials. 3. A working group with representation from the NCI and all of the NCTN/NCORP Research Bases was developed to support the APP initiative and overall practice within the context of NCI-sponsored trials. **Results:** 1. Post guideline implementation metrics indicate: a. More than 1000 APPs registered as non-physician investigators (NPIVRs)b. 800 patients were enrolled by APPs to NCI sponsored supportive care and cancer care delivery trials c. 418 sites implemented the policy to allow APPs to sign orders for investigational (IND) agents and 860 NPIVRs were approved for the IND prescribing task d. More than 100 physicians, APPs, nurses, and research professionals participated in the SWOG APP symposium in April 2022.e. The University of Rochester Cancer Center Research Base NCORP research base led an APP-specific symposium in June of 2022 to highlight, facilitate and encourage APP leadership and participation in clinical trials. **Implications for Practice:** 1. Increased APP education and engagement within the NCTN/NCORP Network has the potential to substantially increase accrual and improve conduct of clinical trials. 2. APPs can significantly contribute to protocol development and leadership in NCI sponsored research. 3. APPs' involvement in clinical research provides an opportunity to expand their clinical practice skills, research expertise, professional development and career satisfaction. **Funding:** Supported by NIH/NCI grant award UG1CA189974, and with support from The Hope Foundation for Cancer Research.

JL1033C

The Surgical Oncology Advanced Practitioner Conference (2018–2021): Evaluating Educational Gaps, Needs Assessment, and Future Programs

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Objectives: 1. To describe the purpose and goals of the Surgical Oncology Advanced Practitioner (SOAP) Conference.2. Summarize the post-conference evaluations from the 2018, 2019, and 2021 SOAP conferences, including the effectiveness of virtual learning format (2021)3. To identify the educational needs of surgical oncology advanced practice providers.4. To provide recommendations for future educational events. **Introduction:** The SOAP conference is an educational forum that focuses on the latest advances in surgical management of solid tumors and the role of the advanced practice providers (APPs) in clinical practice. The goal of the SOAP conference is to foster collaboration and share best practices among APPs working in surgical oncology. A comprehensive conference evaluation is needed to understand the impact of the SOAP conferences, pinpoint the educational needs among surgical oncology APPs, and identify ways to improve future conferences. **Methods:** Demographic and professional characteristics of conference participants were obtained from the first three SOAP conferences (2018, 2019, and 2021). An optional post-conference survey consisted of multiple choice and open-ended questions was distributed to participants and a summary of the findings were presented. Survey questions focused on the quality and effectiveness of the conference, including anticipation of practice changes and recommendations for future educational events. **Results:** Over 90% of the participants were APPs, with most practicing in the hospital, clinical, or academic setting. Over 90-95% of the participants agree that the conference content met their learning objectives, and the information learned was applicable to their scope of practice. For most participants, the information presented at the conferences had a positive impact in knowledge, competence, performance, and patient outcomes. Despite changes related to a complete virtual learning platform in 2021, the educational effectiveness and learning outcomes remained strongly positive. **Conclusion:** The surgical oncology APP group is one with a diverse clinical background and experience. Additional assessments of the APP learners, such as training experiences and preferred learning formats, may provide guidance for future conference planning. Overall, the SOAP conferences provided effective, relevant, and broad-spectrum education for the surgical oncology APPs. Furthermore, participants from the 2021 conference expressed satisfaction with the virtual learning experience and were open to attending a hybrid conference format in the future. **Recommendations:** With the growing demand for surgical oncology APPs and the lack of formal subspecialty training, more educational events for this APP group are needed. Amid the COVID-19 pandemic, the shift of a learning platform from an in-person setting to a virtual learning environment was inevitable. Positive learning outcomes from both in-person and virtual conferences open the possibility of a hybrid learning environment for future programs. Future studies are needed to evaluate overall attendee satisfaction with in-person versus virtual learning and how these different learning platforms impact surgical oncology APP continuing education.

JL1034C

Understanding the Role of Oncology Advanced Practice Providers in Prescribing Anticancer Therapies and Related Privileging Practices

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Background: Oncology Advanced Practice Providers (APPs) include Nurse Practitioners (NP), Physician Assistants (PA), Clinical Nurse Specialists (CNS), and Pharmacists, all of whom work in collaboration with physicians to provide high quality, specialized cancer care. Given the growing US population, aging physician population and increasing number of cancer survivors, significant oncologist shortages are projected in the next several years. This workforce shortage creates an opportunity to expand the services and clinical support provided by oncology APPs. Critical to this process is ensuring that APPs are well trained and privileged to function at the top of their scope of practice. While APPs are integral members of the oncology care team, data is lacking on individual APP function within different practice settings, specifically around the prescribing of anti-cancer therapies. By understanding the current state of APP privileging and prescribing practic-

es across the US, we have the potential to uniformly expand the scope of APP services and improve access to safe and efficient care delivery. **Aims:** Our primary objective is to conduct a prospective, national, web-based survey to understand APPs' roles and operational workflows for prescribing anti-cancer therapies and the related privileging process(es), if any, in both academic and community oncology practice settings. Our secondary objectives are to understand the competency and ongoing evaluation processes for privileging APPs to prescribe anti-cancer therapies. **Method:** Participants will complete a 38-question survey developed based on a review of published oncology APP data sets and expert input. Cognitive interviewing was performed with key APP informants to iteratively formulate final survey questions. Survey domains include basic respondent demographics, practice setting information, and prescribing and privileging practices. The survey protocol was submitted to University of California at San Diego's (UCSD) IRB for exempt research consideration. **Results:** The survey will be distributed nationally via email to approximately 6,000 oncology APPs, including NPs, PAs, CNSs, and Pharmacists, who practice within UCSD or are members of ACCC or APSHO, and are practicing in academic or community oncology settings. Our target accrual is to achieve 2,400 survey responses. **Implications for Practice:** The aggregate data on APP privileging for and prescribing of anti-cancer therapies is primarily limited to case reports, experiential presentations at national APP meetings, and editorials. This project will catalog current practices for credentialing oncology APPs to prescribe anti-cancer therapies, with the goal of identifying more uniform best practices based on a comprehensive survey assessment of a large number of APPs from diverse clinical settings.

JL1035C

Utilization of Circulating Tumor DNA as a Biomarker in Patients With Resectable Colorectal Liver Metastasis: A Case Report on Oncologic Surveillance and Detection of Disease Recurrence

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Background: The liver is the most common site of metastasis in patients with stage IV colorectal cancer (mCRC). Current guidelines for treatment includes hepatectomy and systemic medical therapy, which results in a 5-year survival rate of approximately 50%, and potential cure rate in up to 25% of the patients. Over the years, studies have highlighted key factors contributing to disease recurrence such as primary lymph node metastasis and mutation status at the time of colorectal liver metastasis (CLM) resection, and while there has been an increasing 5-year survival rate in patients with CLM, there is still an unknown to refining patient selection for those who are at higher risk for disease recurrence during CLM surveillance. There are studies showing that circulating tumor DNA (ctDNA) can reflect disease status and treatment response in patients with mCRC, ultimately serving as a longitudinal biomarker and detection of minimal residual disease (MRD). In patients with CLM, ctDNA positivity has been associated with a significantly increased risk of disease recurrence following resection of both primary colorectal tumors and hepatic metastases. We present a case study that describes the unique role of ctDNA in the post-operative surveillance and clinical management in a patient with CLM. **Objective:** 1. Discuss the benefits of ctDNA as a biomarker in patients with mCRC and describe its potential use in liquid biopsy platforms2. Discuss the potential utilization of ctDNA in risk stratifying patients with CLM in the early detection of disease recurrence 3. Summarize the current CLM surveillance guidelines and the potential integration of ctDNA. **Description:** We present a case of a 39-year-old male with stage IV left-sided colon carcinoma with metastasis to the liver and lungs and the role of using ctDNA as an additional biomarker for disease recurrence. The patient was first diagnosed with stage IIIb colon carcinoma in 2018 and had a negative ctDNA after completing systemic medical therapy for CLM. He recurred twice in separate years as shown on surveillance CT scans and both times had positive ctDNA reflecting positive residual tumors. He underwent the appropriate treatment and is currently ctDNA negative with no disease recurrence in the liver. The authors examine the current literature and discuss the benefit of using ctDNA as early detection for identification for patients likely to have disease recurrence. **Conclusion:** In patients with resectable CLM, ctDNA remains a promising bio-

marker that may play a role in the early detection of disease recurrence. The addition of ctDNA should be considered for CLM surveillance strategies, as well as the evaluation of disease response (tumor burden) to systemic medical therapy. Advanced practice providers (APPs) play a vital role in the clinical management of patients and are essential in the coordination of care and longitudinal surveillance. Further studies are needed to investigate the utilization of ctDNA detection to guide the perioperative management of patients with resectable CLM.

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Work Unit-Level Drivers of Burnout Among Advanced Practitioners in Outpatient Hematology Practice at an Academic Medical Center

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Aim: We aimed to characterize and identify actionable work unit level contributors of burnout amongst outpatient advanced practitioners (APs) in our outpatient hematology practice. **Methods:** We administered the Maslach Burnout Inventory (MBI) and the Areas of Work-life Survey (AWS) electronically and anonymously. Responses to the MBI were summarized using mean and standard deviation (SD); responses to AWS were summarized in percentages of match/mismatch/major mismatch. We then identified top areas of work unit level mismatch/major mismatch to create actionable interventions with a goal of decreasing burnout. **Results:** All 8 APs in the work unit completed both MBI and AWS with 100% response rate. The MBI demonstrated 87.5% of APs experienced burnout a few times per month or more, with 62.5% reporting burnout a few times per week or more and 25% felt burnout daily. Subscale analysis demonstrated high levels of emotional exhaustion, with a mean (SD) of 40.4 (9.8), moderate/high levels of depersonalization with a mean (SD) of 12.1 (5.4), and low levels of personal achievement-related burnout (mean (SD) = 45.3 (4.1)). Responses to the AWS identified several areas of mismatch/major mismatch between AP expectations and current job role across domains of workload, control, and reward. In the workload domain, 100% reported a mismatch/major mismatch regarding number of interruptions in a day and 87.5% reported a mismatch/major mismatch regarding both the amount of work required to complete in a day and the intensity of demands from customers. In the control domain, 87.5% reported a mismatch/major mismatch regarding participation in decisions that affect one's work and capacity to influence decisions that affect one's work. In the reward domain, 87.5% of APs reported a mismatch/major mismatch regarding access to perks at work and 75% reported a mismatch/major mismatch regarding the amount of time they do work they truly enjoy. No work unit level factors with significant mismatch/major mismatch in the domains of community, fairness, or values were identified. **Summary:** A significant proportion of outpatient hematology APs at a large academic medical center report high levels of burnout, primarily marked by high levels of emotional exhaustion and moderate/high levels of depersonalization. Despite the high level of overall burnout, there is low personal-achievement related burnout. Potential actionable work unit level drivers of burnout identified were primarily noted in the AWS domains of workload, control, and reward. **Proposals:** As a result of this data, we proposed work-unit level interventions with a goal of decreasing burnout amongst APs in our practice. We initiated interventions including workstation "busy lights" for APs, which allows them to set their availability status as a visual cue for others when approaching with non-urgent questions. We also created smart phrase templates for use in the electronic health record to empower APs to respond effortlessly to messages that should be re-routed to the appropriate care team member as opposed to taking on tasks that are outside their scope of practice. We plan to reassess burnout levels after a 6-month trial of these interventions before trialing additional potential action items identified on the AWS.